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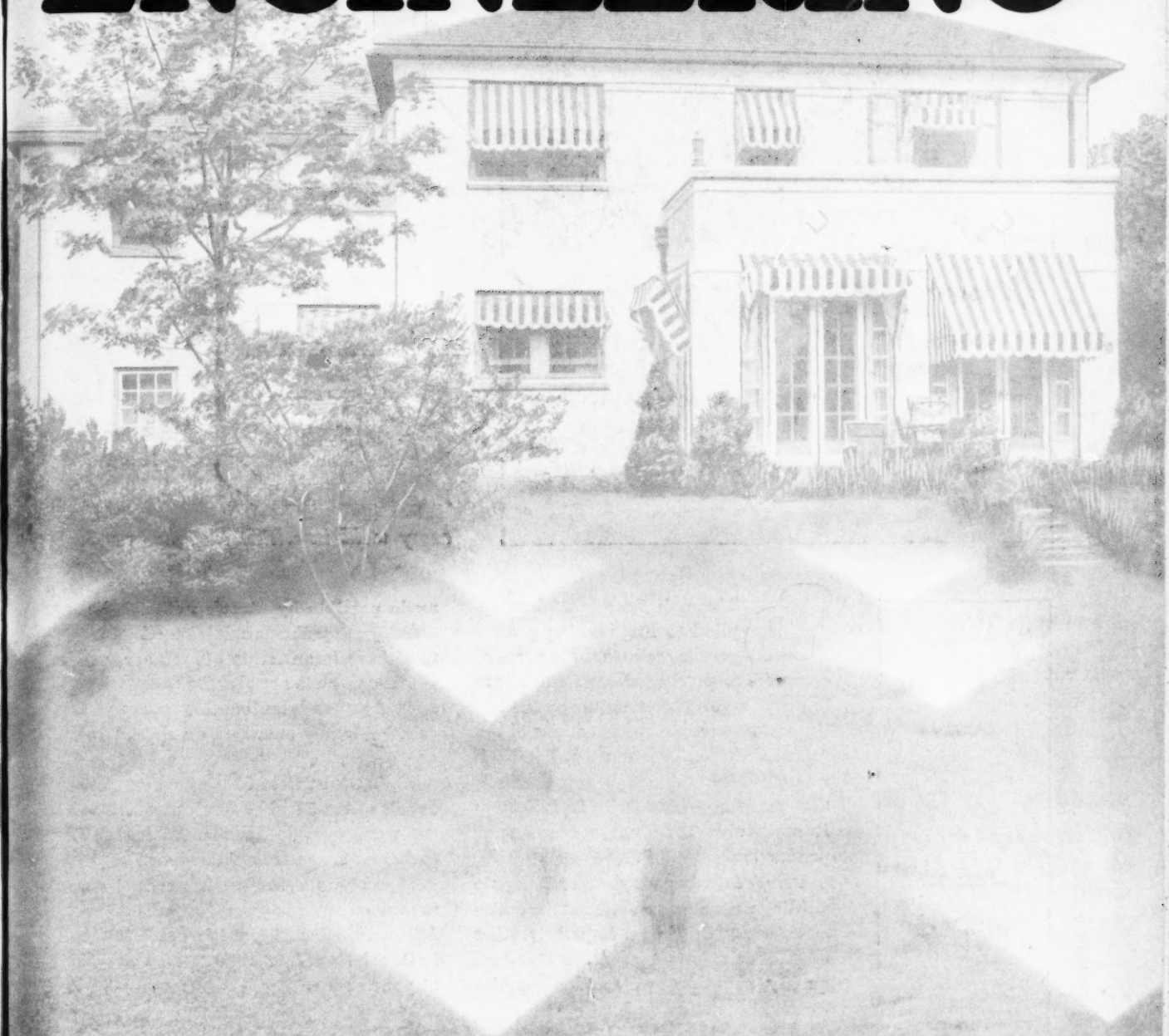
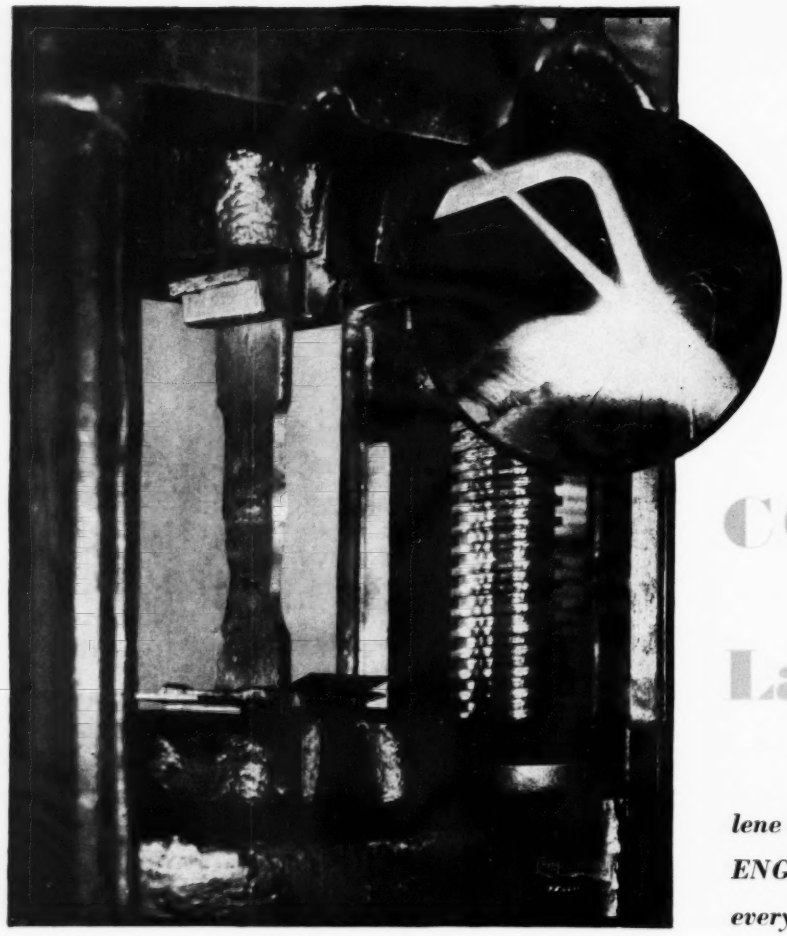
# DOMESTIC ENGINEERING



AUTOMATIC HEAT
Page 53

MARCH 19, 1932

*Plumbing and Heating Contracting and Merchandising*



# CONTROL

## *begins in the* Laboratory

***. . . but AIRCO oxyacetylene and electric welding rods carry ENGINEERED CONTROL into every weld in which they are used.***

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Represented in Texas by Magnolia Airco Gas Products Co., Houston, Beaumont, Wichita Falls, El Paso, Ft. Worth and San Antonio.

**Through Research when applied to Engineering greater profits are assured to users of every Airco product. Illustrated above is a test coupon which is more than meeting tensile strength specifications of the rod used in making the weld. The laboratory not only develops new products that mean new economies in industry; it maintains constant control over production.**

**Users of the oxyacetylene and electric welding processes throughout the entire country are finding it imperative that they take advantage of Airco standard quality, plus the service and economies made possible by Airco's national distribution organization. It is literally true that there is an Airco office near you with a complete supply of gas and electric welding rods and accessories to meet practically any standard or special requirement.**

**Write the nearest Office for complete details of the 37 classifications of Airco gas welding rods and electrodes and their recommended applications.**

**If you have a problem in production, maintenance or repair of metals, Airco Applied Engineering may be able to aid in its solution. A representative will call at your request.**

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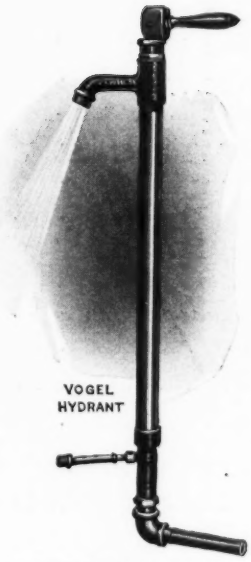
# AIR REDUCTION SALES COMPANY

**Lincoln Building, 60 E. 42nd Street, New York**

# *Be sure of the product •*

# *Be sure of your profit •*

## SPECIFY VOGEL FROST-PROOF CLOSETS AND HYDRANTS

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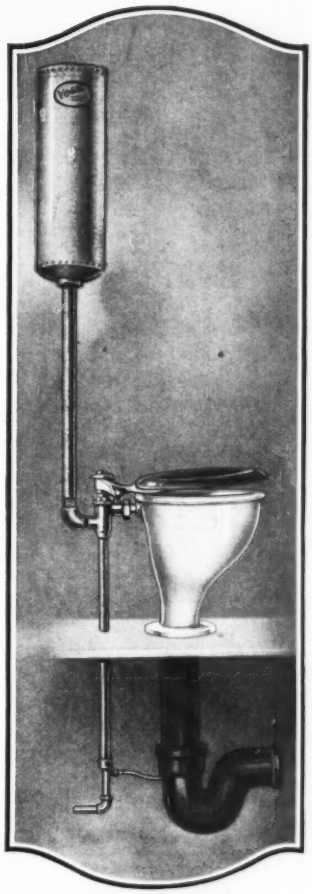
UNLESS the product will stand up you are going to lose your profit in back calls for repairs. But you can *always* depend on a Vogel. The harder the use, the better they operate, and we have never known one to freeze when properly installed—and that's saying a lot when you realize there are more than 500,000 in all parts of the country.



NUMBER ONE VOGEL FROST-PROOF CLOSET

Simple in operation. Sturdy in construction. Half a million in operation.

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Regarding price—we figure it this way. You're our salesman and entitled to a good profit on every Vogel outfit you install. So we do everything in our power to see that you get it, by selling only through recognized trade channels—wholesaler to plumber. We never sell direct, although we have been asked to do this hundreds of times.

***Literature on Vogel Frost-Proof Closets and Hydrants sent promptly, imprinted with your name and address.***

•

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**Wilmington, Del. St. Louis, Mo.**

**VOGEL** PATENTED *Frost-Proof* **PRODUCTS**

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*Plumbing & Heating Contracting & Merchandising*

Established 1889

Vol. 138, No. 6 March 19, 1932 Whole No. 1965



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## IN THIS ISSUE


Page

Lower Price of Materials and Labor Opens Door to Increased Sales ..... 22

Opportunities for Spring Profit in Sprinkler Work. By Clarence E. Baker ..... 24

Piping Boiler Connections. By H. T. Hall ..... 28

New Practice in Plumbing. By R. M. Starbuck ..... 31

Application of Refrigeration to Heating and Cooling of Homes. By A. R. Stevenson, Jr., F. H. Faust and E. W. Roessler ..... 33

The Pitch of Drainage and Vent Lines. By R. M. Starbuck .. 37

Heating in Residences and Small Structures. By H. L. Alt .... 51

Eastern Supply Association's Spring Meeting ..... 80

PLUMBING AND HEATING MERCHANDISING

Personal Contacts Preferred ..... 40

Leading the Public to Buy ..... 44

AUTOMATIC HEAT

Stoker Sales Pay ..... 55

Piping Changes Stop Noise ..... 58

Sell the Job Right ..... 63

Gas Heating for Big Home Building Project ..... 68


## SPECIAL DEPARTMENTS


Editor's Page ..... 21

Our Industry ..... 47

Supply News ..... 73

Markets ..... 86

The Trade ..... 93

Retail Advertising Service ..... 96

Convention Dates ..... 98

Questions and Answers ..... 100

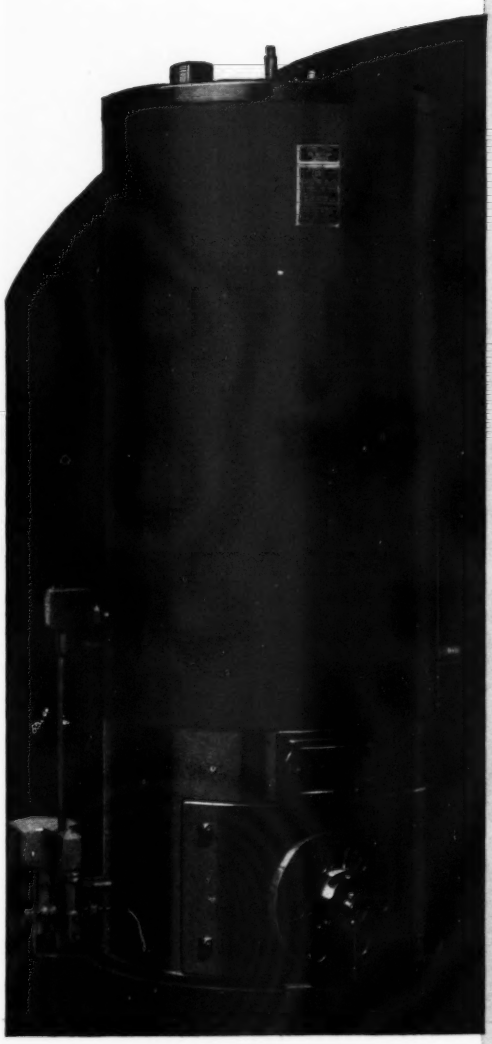
Items for Store, Shop and Job ..... 104

New Trade Literature ..... 108

Woman's Page ..... 110

Plumbing Patents ..... 115

Index to Advertisers ..... 118



# A COMPLETE MATCHED UNIT . . . more heat from less oil

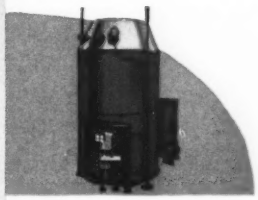
The MW Oil-Burning Boiler Unit is called a complete matched unit for good reason. Burner, Boiler and Flues are made and matched to work together. Result—this MW Matched Unit produces 60% more heating efficiency than the average oil burner that is simply grafted on a coal type furnace.

How does the MW Matched Oil-Burning Boiler work? It concentrates the intense burner flame on the boiler head, draws the heat up through steel tubes that pierce the water, and retains that heat in the water until it is wanted for heating the rooms upstairs.

The MW Boiler Unit is the latest word in home heating efficiency; sells at a price within reach of most home owners. And, what a story for the dealer to talk up! Here is conservation of heat; no air pockets. Here is the way to get every dollar's value from oil; more heat and comfort this Winter at less cost. And you can prove it.

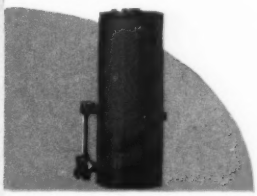
A simple alteration of controls and accessories makes the MW Oil-Burning Boiler Unit for Steam Heat adaptable to Hot Water Heating. Fully automatic, thermostatically controlled. The unit is enclosed in a double steel casing insulated with mineral wool. The outer casing is handsomely lacquered in Chinese Red.

The MW Matched Burner and Boiler Unit is listed as Standard by the Underwriters' Laboratories.



**MW "Weather Control" Unit**

Sell your home-owners all-year comfort—Winter warmth with healthful, humidified air; Summer relief with cooling air in all rooms. The MW Oil-Burning "Weather Control" Unit is automatic, economical. Includes Combustion Chamber, Oil Burner, Thermostatic Control, Humidifier, Air Circulating Blower—all *Matched*. Uses present air ducts in walls, reduces basement ducts. Listed as Standard by the Underwriters' Laboratories.



**MW Oil-Burning Water Heater**

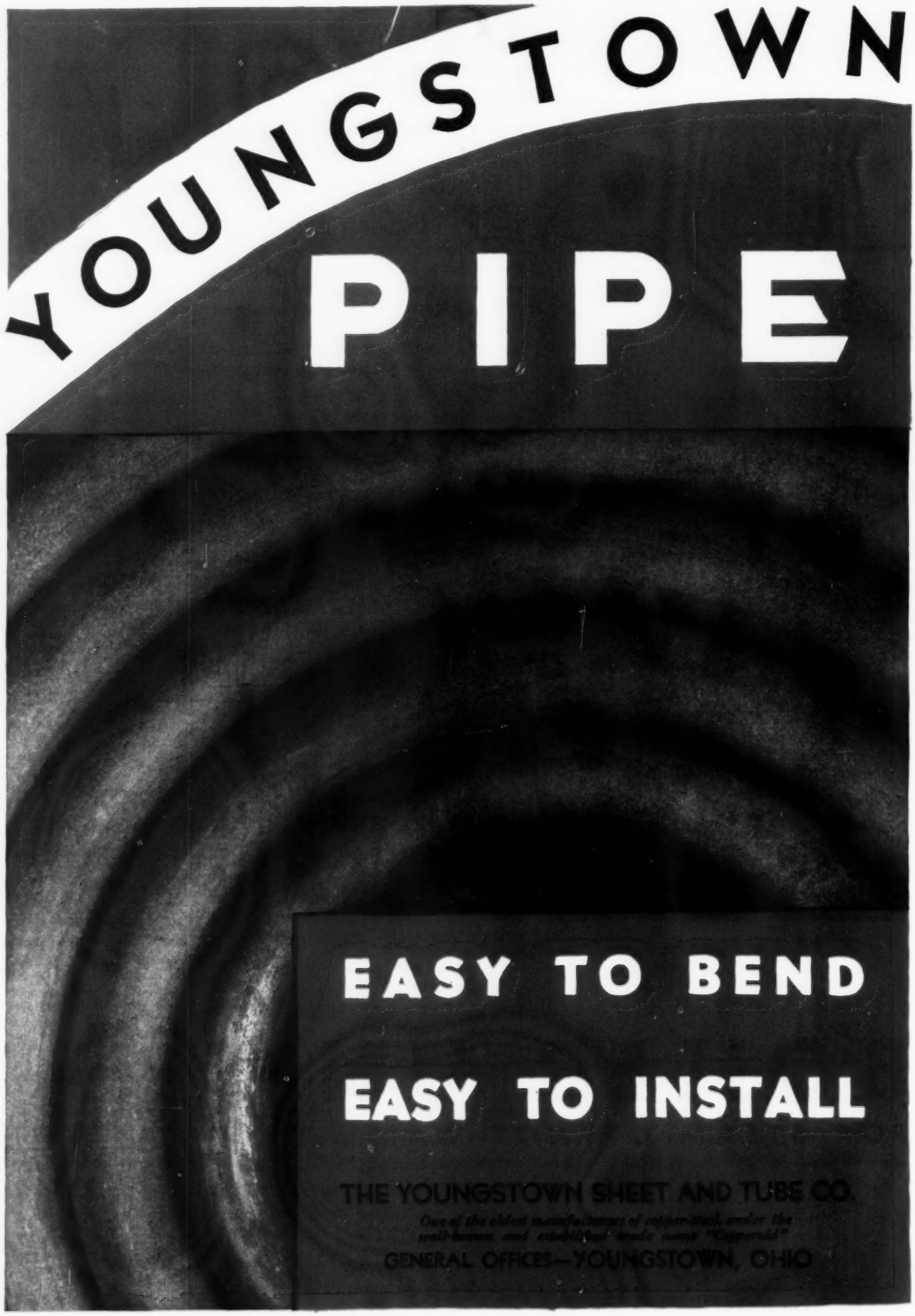
Heats 32,000 gallons of water (the year's supply for an average family) for about $16.00! Compare that with other heater costs. The MW Oil-Burning Water Heater is automatic, requires no servicing. Has proved easy to sell along with boiler installations. Also listed as Standard by the Underwriters' Laboratories.

# MW BOILER UNIT

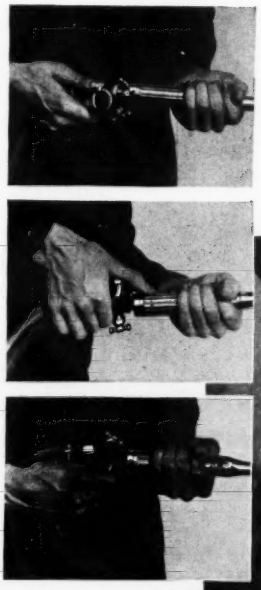
## FOR STEAM OR HOT WATER HEAT

(manufactured by MOTOR WHEEL CORPORATION, Heater Division, Lansing, Michigan)

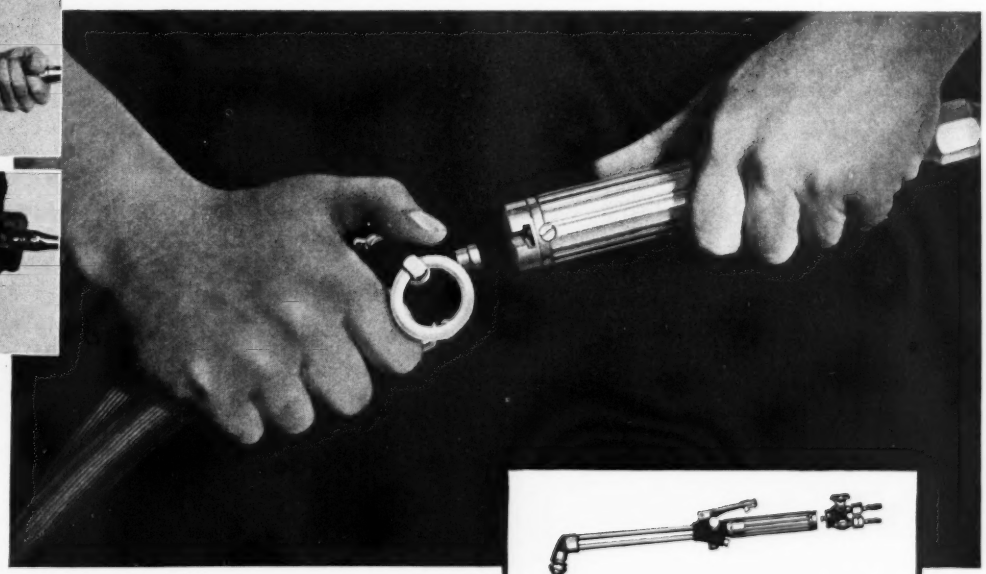
Dealers Everywhere Have Found The MW Franchise Profitable. Are you interested? There are a few such franchises still available. Write for these facts, today. We'll put you in touch with our nearby distributor.


YOUNGSTOWN
PIPE
EASY TO BEND
EASY TO INSTALL
THE YOUNGSTOWN SHEET AND TUBE CO.
GENERAL OFFICES—YOUNGSTOWN, OHIO

# WHEN YOUR BLOWPIPE *Saves Time* YOU SAVE MONEY



*Ten Seconds Is All You Need to Change Blowpipes*



WITH Prest-O-Weld Detachable Valve Body Blowpipes, you can do an hour's work in an hour's time, no matter how often you have to change blowpipes.

The Prest-O-Weld Detachable Valve Body saves time by making it possible for you to change blowpipes without disconnecting the hose, without using wrenches, and without first shutting off and then resetting the regulators. It fits four new type Prest-O-Weld blowpipes. In ten seconds, you can change from any one to any other merely by snapping off one handle and snapping on the other. Handles cost less than complete blowpipes, so you save money too.

Your jobber carries Prest-O-Weld Detachable Valve Body Blowpipes. Ask him to demonstrate their many advantages.

PREST-O-WELD
WELDING AND CUTTING APPARATUS

The new Prest-O-Weld Type C-105 Cutting Blowpipe, for all cutting up to 12 in., is equipped with the Prest-O-Weld Detachable Valve Body.

This light, well-balanced blowpipe is especially designed to resist rough handling. Its patented conical nozzle protects the seat when the nozzle is dropped. The head, cutting valve body, and lever are pressure forged for added strength. A 75-deg. angle head is furnished as standard, but a 90 deg. head can also be supplied.

Prest-O-Weld Type C-105 Cutting Blowpipe, complete with 4 nozzles, lighter and wrench..... $42.00

Prest-O-Weld Type C-105 handle assembly with 4 nozzles, lighter and wrench (same as above but without valve body)..... $34.00

*Prices slightly higher west of Rocky Mountains.*

**THE LINDE AIR PRODUCTS COMPANY**

*Unit of Union Carbide and Carbon Corporation*

126 Producing Plants UCC 627 Warehouse Stocks

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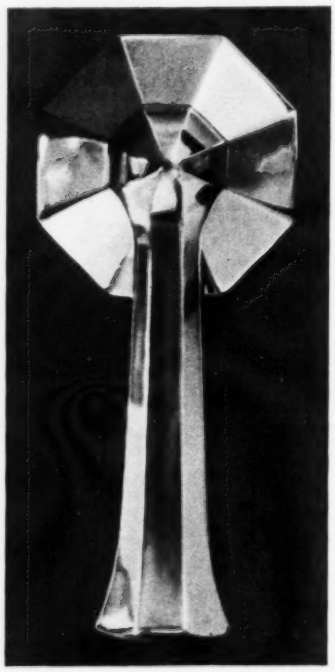
LINDE OXYGEN · PREST-O-LITE ACETYLENE · OXWELD APPARATUS AND SUPPLIES · UNION CARBIDE

# Tank levers THAT ARE Sales levers

DESIGNED for the customer who demands good looks as well as good quality, these tank levers will send your sales soaring. Because their modern, graceful lines and gleaming chromium plate add a note of smartness to the bathroom, your customers will want them not only for new installations, but for replacements. And replacement work is your big opportunity today.

From the standpoint of practicality, these levers have many advantages. Installations are quick, since the levers are easily assembled in the tank and fit the standard tank punching. The lift arms and hangers are made of heavy cast red brass that endures for a lifetime. The operating principles insure positive action every time. Both No. 32 and No. 34 have exactly the same external design and finish. But No. 34 is priced lower because it has a simpler mechanism inside the tank. You will build new business by stocking both types now.

## No. 32 AND No. 34 . . . MODERN ADDITIONS TO THE M-VB LINE



Remember that these levers are only two of the many excellent items in the M-VB line. A complete range of ballcocks, levers and tank fittings is included. All materials used are carefully chosen. Designs are correct. Workmanship is painstaking and accurate. The mechanical efficiency and wearing quality of every product made by M-VB are well known.

Just ask your jobber about the M-VB line . . . or write direct to us for details and a catalog.

**MORENCY-VAN BUREN DIVISION**
**Scovill Manufacturing Company**
**STURGIS MICHIGAN**

A COMPLETE LINE OF CLOSET TANK FITTINGS

*Albert Kahn*
*Detroit, Mich.*
*Architect*

*Johnson & Larson*
*Detroit, Mich.*
*Heating Contractors*

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TONCAN
COPPER
MO-LYB-DEN-UM
IRON

Toncan Iron, the time-defying modern alloy of refined iron, copper and molybdenum, was selected for this prominent Detroit building to resist rust and corrosion.

Eight thousand feet of Toncan Iron Pipe was used for steam return lines—service as severe as can be encountered in any building.

Toncan Iron sheets were used for all exposed ventilating sheet metal work.

In this building, as in many of the other outstanding buildings of the last generation, Toncan Iron was used to combat the corrosive conditions that cause early failure of ordinary ferrous metals—that cause prematurely high replacement costs in many otherwise modern structures.

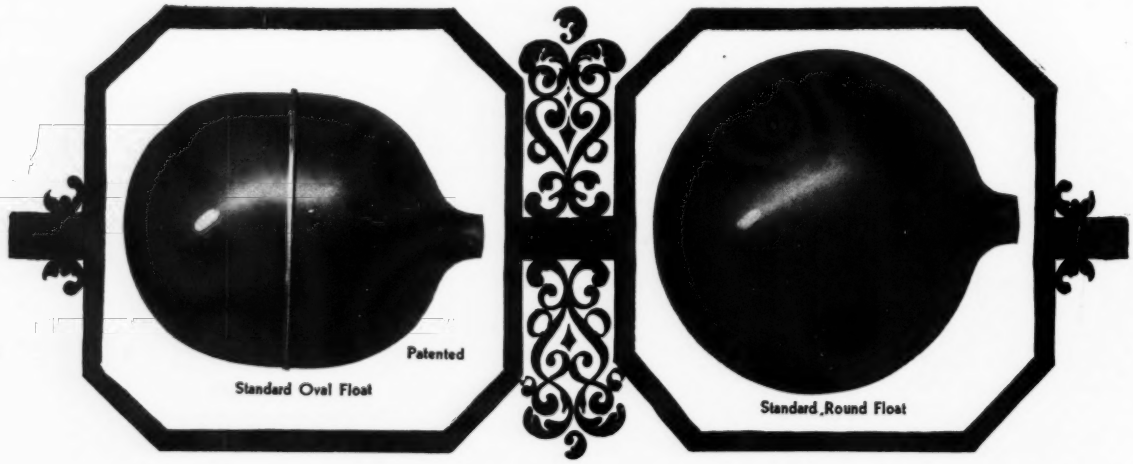
The story of Toncan Iron is one of metallurgical triumph over nature's forces. Read it in "Pipe for Permanence"—a comprehensive 64-page book filled with facts and information—a copy of which will be sent to any architect or contractor upon request.

**REPUBLIC STEEL CORPORATION**

GENERAL OFFICES YOUNGSTOWN, OHIO

# SOLD ONLY THROUGH Recognized JOBBERS

If your jobber does not carry them send us his name and address. We will fill your order direct and notify him.




Plumbers can make a distinctly profitable item out of STOKES Hard Rubber Floats. They indicate a lively interest in seeing that your customer is supplied with the best that can be had, and often become a "leader" for further business.

# STOKES
# HARD RUBBER FLOATS

Floats of Hard Rubber have unusual advantages. They can neither rust nor corrode. They are ideal for underwater use. STOKES Hard Rubber Floats are as nearly perfect as human care and skill can make them. They may safely be guaranteed for the life of the tank.

*Another* "ASK YOUR JOBBER" *Profitable Item is the*

## STOKES HARD RUBBER OVERFLOW TUBE and ADJUSTABLE GUIDE ARM and REDUCING BUSHING

Look for the

Mark of Quality

Jos. Stokes RUBBER CO.

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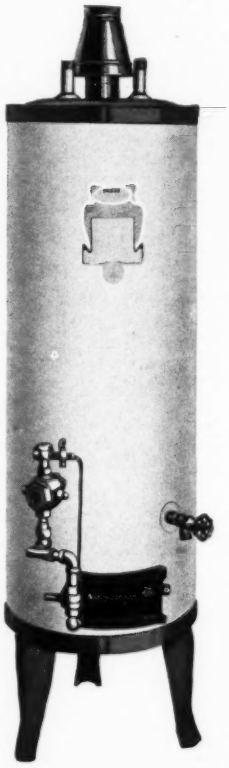
*Moulders Since 1897*

Canadian Plant: Welland, Ontario

HARD RUBBER IN EVERY CONCEIVABLE FORM — MOULDERS OF PLASTICS

# 3 LITTLE WORDS



Dixie (Series R) Automatic Storage Heater. Made in 3 sizes, 20, 30 and 40 gallons. List prices: $45.00, $55.00 and $65.00.

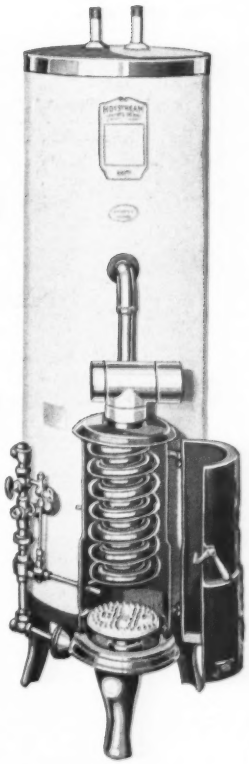
## *that mean Better Business for you*

Both 1931 and the year before proved that the secret of easier, quicker, more satisfactory water heater sales is found in three words—

## "Sell the Hotstream!"

And the reasons are many. The most important ones are: More homes, apartment buildings and shops can afford the Hotstream; more homes, apartment buildings and shops are in the market for the carefree, 24-hour hot water happiness Hotstream delivers; and more homes, apartment buildings and shops want the economy features the Hotstream offers. If you were selling Hotstreams to your community the past year, you can visualize the even rosier prospects of 1932; if you weren't — NOW is the time to get in on this momentum-developing business.

*Write today for full details and our new catalog.*



No. 20SA Hotstream Automatic Storage Heater, Side Arm Type, List Price $66.00 Complete

THE HOTSTREAM HEATER CO., Cleveland, Ohio

*"Makers of Heaters that Heat"*

*Manufacturers of a Complete Line of Automatic Storage Heaters, Tank Heaters, Indirect, Gasoline and Kerosene Water Heaters*

Represented in Canada by
W. H. Cunningham & Hill, Ltd.
Toronto

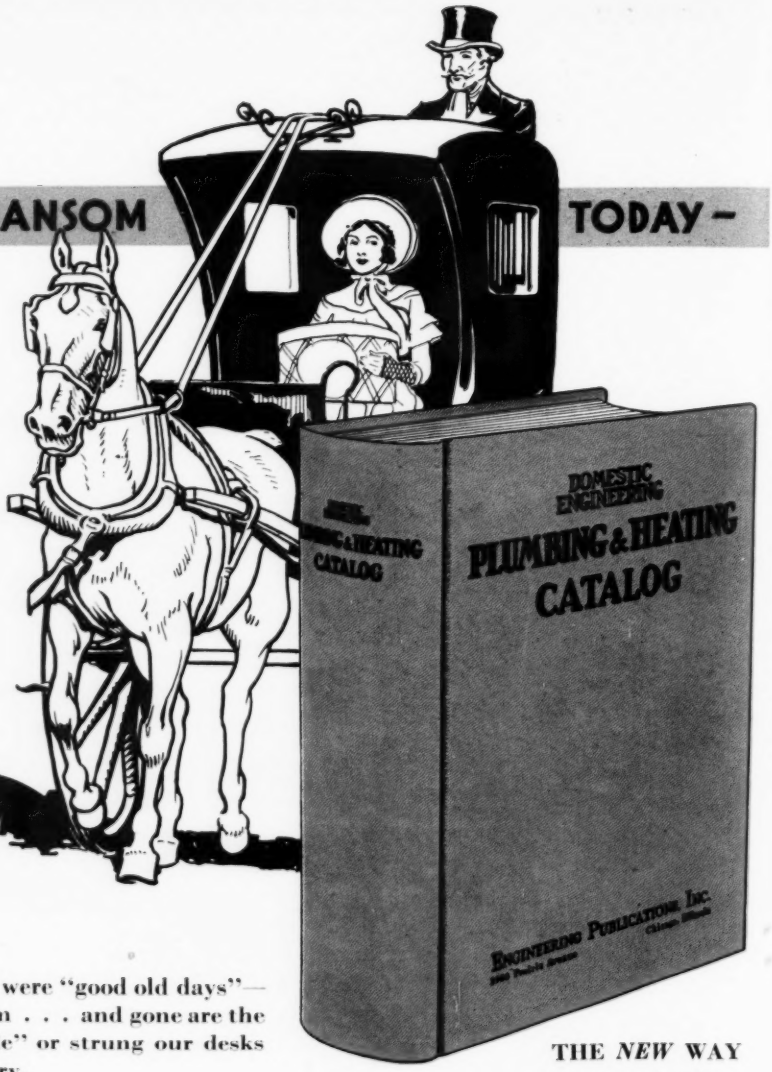
HOTSTREAM
AUTOMATIC STORAGE
HEATERS

# YOU DON'T RIDE A HANSOM TODAY—

# NOR

## SHOULD YOU USE OLD FASHIONED CATALOG METHODS

THE *OLD* WAY




THE *NEW* WAY

1200 pages of solid catalog material. Over 8000 illustrations. 2000 pages in all. Indexed and cross-indexed.

GONE are the "good old days"—if they were "good old days"—when we did our traveling in a hansom . . . and gone are the days when we affected a "catalog file" or strung our desks end to end with the catalogs of the industry.

Today the Big Orange Book replaces the very unreliable "catalog file" with its lost and misplaced catalogs.

The Plumbing and Heating Catalog has won complete acceptance and preferred position with 5000 of the top group Plumbing and Heating Contractors and all of the more than 1400 Wholesalers.

By no process of thinking can the confusion of individual catalogs, whether four or forty pages, be expected to stand the test of competion with the Plumbing and Heating Catalog. In this consolidated catalog, bound under one cover, are the catalogs of 468 manufacturers indexed and cross-indexed for ready reference.

Let us explain our Catalog Service, which relieves you entirely of the work of preparing your catalog . . . and we will also explain how your catalog in the Big Orange Book will reach and retain preferred position on the desks of the buying power of the industry.

DOMESTIC ENGINEERING

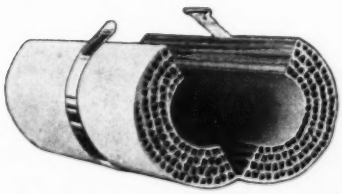
PLUMBING & HEATING CATALOG

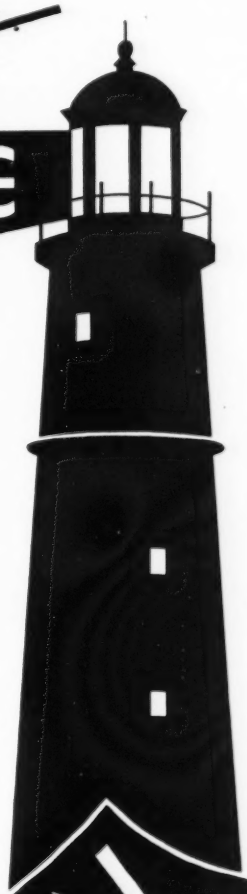
1900 PRAIRIE AVE., CHICAGO

LIGHTING THE WAY
FOR A SUCCESSFUL
1932

CELLOTONE

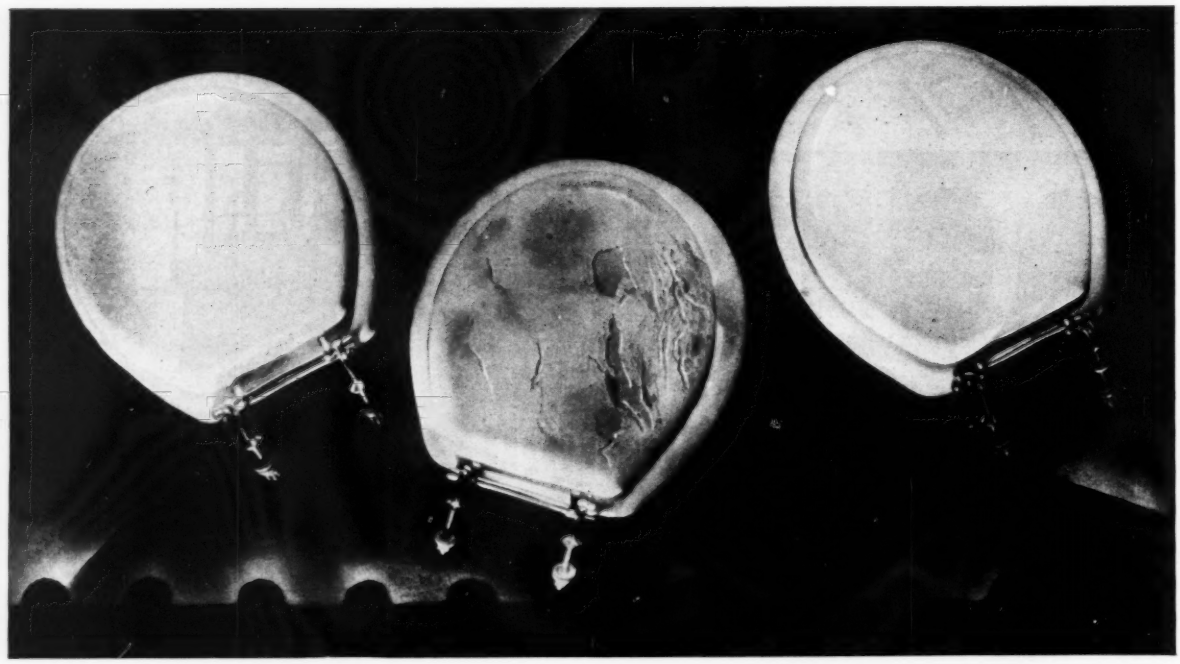
A New Insulation
Styled for
TOMORROW
Priced for
TODAY





NORRISTOWN
MAGNESIA & ASBESTOS CO.
NORRISTOWN PENNSYLVANIA

# *Profit* and *Loss* in THREE ACTS



**ACT I—*Scene—Plumbing Dealer's Store*—JUNE**

"Good morning. My wife tells me we need a new toilet seat. We want one of those good-looking white seats we've seen advertised."

"Yes sir. We have them. About how much do you want to pay?"

"Not any more than I have to. But, of course, we want it to last."

"Well, I can give you a Church Sani-White Seat or one that looks exactly like it, but won't cost you quite as much. Here it is."

"That looks all right. And since you recommend it I might as well take the cheaper one."

"Thank you. Come in and see us again."

**ACT II—*Scene—Customer's Bathroom*—MARCH**

"John, what kind of a toilet seat did you buy last summer? We've had it less than a year. It's cracking already, and the *paint* is peeling off."

"I don't know the name. The plumber said it was all right."

"Did you ask for a Church Seat?"

"Yes, but this one was a little cheaper and the plumber said it was about the same."

"Well, it *isn't* the same! A real Church Seat wouldn't crack and peel like this paint is doing. You've been stung."

"Certainly looks like I have been. Well, I'll get a new one *but not from that plumber.*"

**ACT III—*Scene—Competitor's Plumbing Store*—APRIL**

"I need a new toilet seat. What is the best kind to buy?"

"A genuine Church *sheet-covered* Seat."

"Why do you recommend Church Seats?"

"Because, when I sell a Church Seat it stays sold. I've got ordinary sprayed seats if you want that kind but I advise you to get a Church Seat."

"Well, the seat I have now isn't a year old, but it's cracking and peeling."

"Can't be a Church Seat then. Must be a sprayed seat. They look like Church Seats when new but they don't last. Every Church Seat is covered with a smooth, wear-resisting, moisture-proof sheathing.

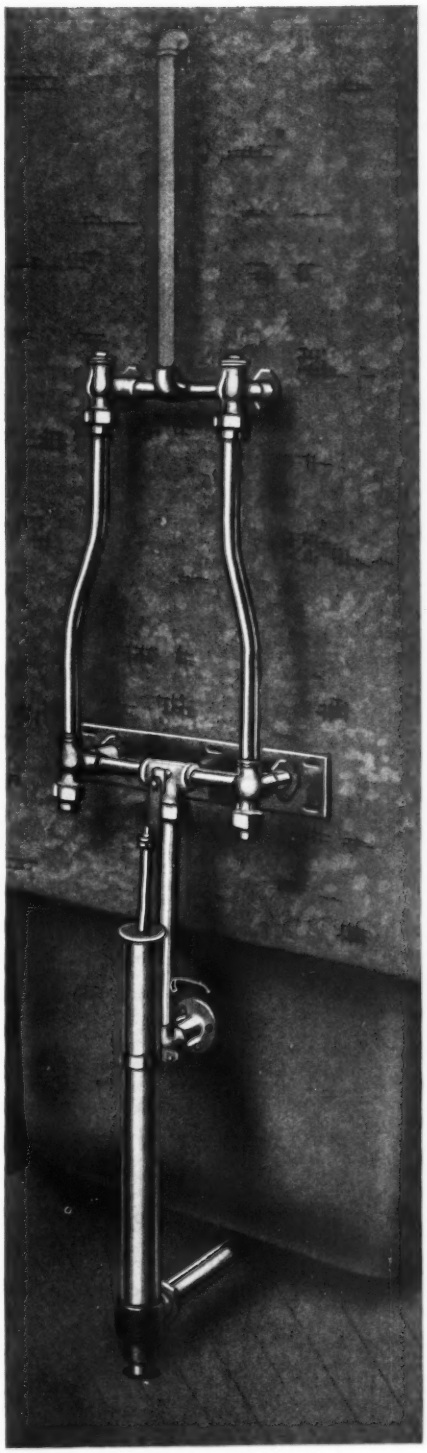
"Look here—see the difference. The finish is *sprayed* on this ordinary seat. You can scratch it off. Now look how this *Church Seat is covered with a sheathing that can't wear out.*"

"I'm convinced. Send us a Church Seat! You know your business. By the way, we're building a new house this summer. See me in a month or two. I'd like to talk with you about the plumbing contract."

* * *

SINCE you're in business to make a *profit* wouldn't it pay you to concentrate on Church Seats? They stay sold because they last. Yes, *every* Church Seat is *sheet-covered*. C. F. Church Mfg. Co., Holyoke, Mass.

# IT'S THE WORKS
# *behind the wall*
# THAT COUNT



YOUR customers may never see the concealed parts of Scovill built-in units. But they will appreciate them just the same . . . in terms of service.

Scovill one-piece shower and bath combinations have patented construction features that mean fewer joints, fewer elbows behind the wall . . . in a word, simplicity. It is obvious that simpler fixtures have fewer places for trouble to start.

The valve used on both shower and bath equipment has internal mechanical features that prove themselves in action. A long bearing swivel seat prevents water-chatter and assures a positive shut-off without grinding on the washer. Double-pitch threads on the valve-stem allow a full flow of water with a slight turn of the handle. Sure and efficient valve service satisfies the customer.

Scovill built-in units come in a variety of combinations to suit the luxurious or modest home. Shipped complete with all joints soldered, they are easy to install, following standard roughing-in dimensions.

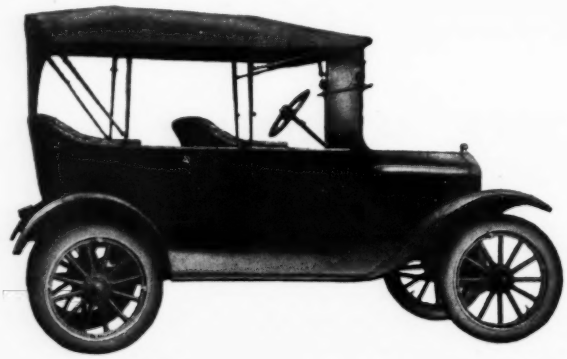
The Scovill Manufacturing Company, founded in 1802, has served leading plumbing contractors for years. A complete line of quality plumbers' brass goods at reasonable prices is available on order. Write for a catalog.

**SCOVILL MANUFACTURING COMPANY**
PLUMBERS' BRASS GOODS DIVISION
**WATERVILLE • CONNECTICUT**

*Scovill Flush Valves • Shower and Bath Fixtures • Tubular and Miscellaneous Plumbers' Brass Goods for General Plumbing Requirements*

# Scovill

SCOVILL



# Old Stuff . . .

## won't sell this year

Ford dealers nearly "starved" when they had nothing but "old stuff" to sell to a public that wanted something new.

The public accepted pumps that had an old-fashioned design and inconvenient "gadgets"... when business was good. But this year, they won't buy "old stuff."

That's why Goulds have brought out a completely modernized line of pumps... shallow and deep well... to meet every water service need. Gone are the service "headaches." In designing CID PUMPS, we didn't try to "kid" ourselves that pumps never need attention.

We built CIDS with reserve capacity, reserve power, reserve strength to give years of trouble-free operation. But at the same time we made them easy to take care of. Study the illustrations . . . you'll see the difference right away. You'll see easy-service features from end to end and top to bottom.

*Then study the prices.* It won't take much study to convince yourself that these prices for these pumps, backed by a national advertising campaign, are what you need for 1932. See your distributor, or write for details.

**OLD METHODS WON'T SELL, EITHER**

DISTRIBUTORS: For the first time in the history of the pump business, the distributor is protected by a franchise that assures him the full support of the manufacturer and the full rewards of his sales efforts. Goulds sales policy is clean-cut in this respect. It provides for exclusive territories, credit to the distributor for all business from his territory and established resale prices . . . all this, plus effective cooperation in selling.

Any policies that give the distributor less protection are old methods that have no place in the 1932 picture.

# GOULDS

# CID

**THE PUMP WITH**
**RESERVE CAPACITY**
**RESERVE POWER**
**RESERVE STRENGTH**

## RECORD BREAKING LOW PRICES

### ATTRACTIVE DISCOUNTS

| | LIST PRICE |
|---|---|
| Shallow well Cid 250 gallon per hour Pump complete with ¼ h. p. 110/220 volt 60 cycle AC electric motor and automatic control for direct from well service. | $65.00 |
| Same as above with 18 gallon galvanized tank and fittings. | $77.50 |
| With 42 gallon galvanized tank and fittings. | $90.00 |
| Other Shallow Well Cids, 500 gallon and 750 gallon capacity, from | $90.00 |
| Deep Well Cid, 6″ stroke pumping unit with ½ h. p. 110/220 volt 60 cycle AC motor. | $100 |
| Same as above with 42 gallon galvanized tank and automatic control. | $145 |

*(Air chambers on deep well pumps, $5 extra)*

**DEALERS: Write for the full story of this great new line of pumps.**

## IMPORTANT FEATURES OF SHALLOW WELL CIDS

1. Large air chamber means steady flow.
2. Relief valve located inside chamber . . . protected from accidental misadjustment, or tampering.
3. Air chamber secured by 2 bolts, located outside . . . no threaded connections running *into* cylinders to rust and strip if discharge valves need cleaning.
4. Suction valve cover clamped on . . . held by one bolt, located outside . . . no threads running into cylinder.
5. Stuffing box completely exposed . . . no overhead casting to interfere when tightening.

## DEEP WELL CID, 4″, 6″, 8″, 12″

Has many new features. Up-stroke and down-stroke have same speed . . . means smooth, quiet flow without water-hammer. Plunger rod has straight line motion . . . does not bind on packing. Double-reduction gears . . . makes pump compact, reduces noise and vibration. Patented oil circulator . . . keeps constant oil bath on mechanism. Gears mounted on through-shafts . . . pumps without this feature are wracked by vibration.

# PUMPS INC.

**SENECA FALLS · NEW YORK**
**WORLD'S LARGEST PUMP SPECIALISTS**

# Join this Growing Movement *now!*

Through more than twenty publications serving all phases of the building and home industries and serving, too, the advertising men in the manufacturing divisions of these industries, the "Spend for the Home in 1932" movement has been put before more than half a million persons.

The plumbing and heating field, through the efforts of DOMESTIC ENGINEERING, has used more than 100,000 stickers of the slogan in colors, close to 20,000 posters and dozens of electrotypes for newspaper advertisements, postcards, letterheads, envelopes, etc., etc.

The editorial pages of this issue of DOMESTIC ENGINEERING suggest even further uses for this slogan which has so thoroughly blanketed the retail field and which is swiftly mounting in importance as a sales builder.

You are invited to join this movement. DOMESTIC ENGINEERING makes it possible for you to do so at a trifling cost. When you use the posters, stickers and electrotypes of the slogan, you tie up with what is perhaps the fastest growing sales movement of the building and home industries.

**GET your supply of this material today. Here are the prices of the window cards or posters, size, 8¼x12 inches.**

**The prices of these cards are as follows:**

**10 cards for 50 cents**
**25 cards for 75 cents**
**50 cards for $1.25**
**100 cards for 2.00**
**500 cards for 9.00**
**1000 cards for 17.00**

**We cannot undertake to ship less than 10 of these cards.**

**Stickers of the slogan, in the same design as shown above but of 1¼ in. x 2 in. proportions are also available. Order these stickers. Use them on your letterheads, envelopes, billheads, business cards, etc., etc.**

**The prices of the stickers are as follows:**

**1000 stickers for $1.50**
**2000 stickers for 2.50**
**5000 stickers for 5.00**

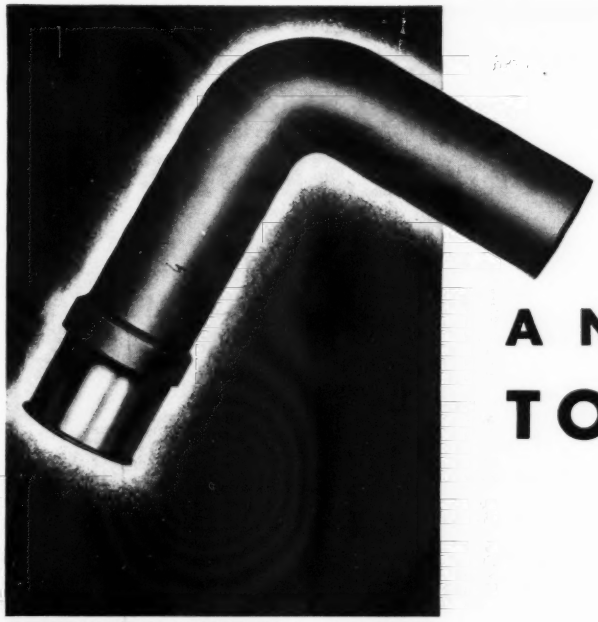
**Get a supply of cards and stickers now.**

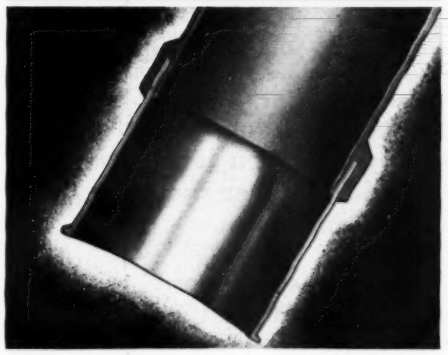
**Electrotypes of various sized cuts of the slogan are also available. These can be had for one and two-color printing. Electrotypes are priced as follows:**

**Electro for one-color printing, 2⅜x2⅜ in..... $0.35**
**Electro for two-color printing, 2⅜x2⅜ in..... .65**
**Electro for one-color printing, 3½x5½ in..... .55**
**Electro for two-color printing, 3½x5½ in..... 1.00**
**Electro for one-color printing, size approximately 8x12 in..... 2.50**
**Electro for two-color printing, size approximately 8x12 in..... 4.50**

**Order what you need to get in on this big drive now. Read the editorial pages of this issue for more details.**

**DOMESTIC ENGINEERING, 1900 PRAIRIE AVE., CHICAGO**





# A NEW AND BETTER TOILET OUTLET

## . . . combining lead bend and brass ferrule

● Time and money can be saved by using this new, improved toilet outlet. Being in one piece...lead bend and brass ferrule already joined together...there is no joint to wipe. This saves time. Outlets can be installed more quickly...a greater number can be put in place in a day. And you save money because this one-piece outlet carries a lower price than what you now pay for bend and ferrule separately and wiping the two together.

Note particularly the joint...that it is smooth on the inner face and lapped in the direction of flow. There are no solder beads to interfere with the free passage of water...no places for solid matter to collect. Also, this joint is stronger than a wiped joint because it is bonded *inside* as well as outside. It will withstand 100 lbs. water pressure without the slightest sign of failure or leakage.

This new outlet, which is furnished also in straight-piece units, is made of the highest quality materials...4″, 8 lb. lead and a heavy ferrule of first-quality brass.

And speaking of lead pipe, remember: It pays to look for the Dutch Boy trade-mark whenever you buy lead pipe. This familiar trade-mark is your assurance of quality pipe of the proper wall thickness and correct weight per running foot. National Lead pipe is marked every few inches with the Dutch Boy trade-mark and the name of the National Lead Company.

### ● *Increased Outside Diameters*

National Lead Company lead pipe now comes in new increased outside diameters in all sizes from 1¼″ to 2″, inclusive. These new diameters conform to the recommendation of the Lead Industries Association and will safely withstand constant, cold water pressures as follows:

| | *Per Sq. In.* |
|---|---|
| A, or Strong | 50 lbs. |
| AA, or Extra Strong | 75 lbs. |
| AAA, or Double Strong | 100 lbs. |

NATIONAL LEAD COMPANY

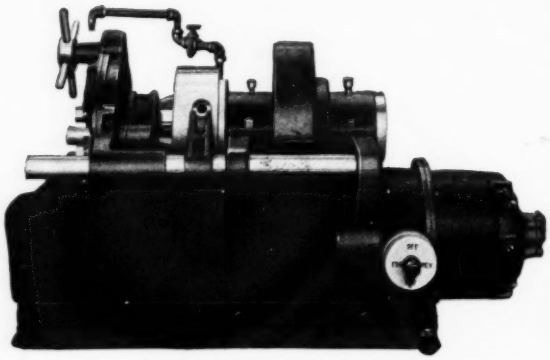
New York, Baltimore, Buffalo, Chicago, Cincinnati, Cleveland, St. Louis; National-Boston Lead Company, Boston; Georgia Lead Company, Atlanta; Gibson & Price Company, Cleveland; National Lead & Oil Company of Pennsylvania, Pittsburgh; John T. Lewis & Bros. Co., Philadelphia.

LEAD PIPE

# THERE ARE NO WEAK SPOTS—

—when "TOLEDOS" are used on piping jobs. Fittings hug the smooth, long-tapered, perfect threads cut by "TOLEDO" pipe tools and pipe machines so tight that leak-proof jobs result.

"TOLEDO-MADE" connections are the tightest part of any piping job and will stay tight through years of trouble-free service. Air pounding and vibration has no effect on them.



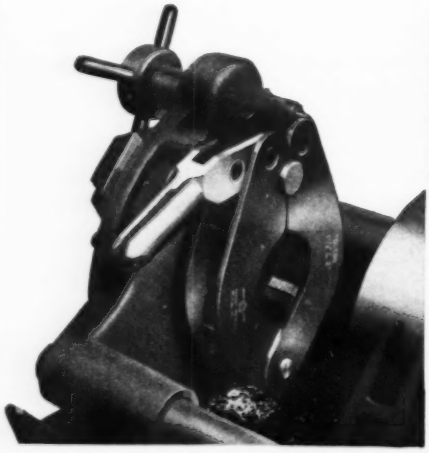
The "TOLEDO" No. 999—½ to 2 in. Portable Power Pipe Machine. The efficiency of this machine can be increased by using "TOLEDO" Quick-Opening Die Heads with Rake Type Dies.

Not only strength and durability but economy in piping erection is obtained with "TOLEDOS." A tight leak-proof connection is made in a fraction of time required by any other method. No other method offers such speed or satisfaction in the handling of piping jobs.

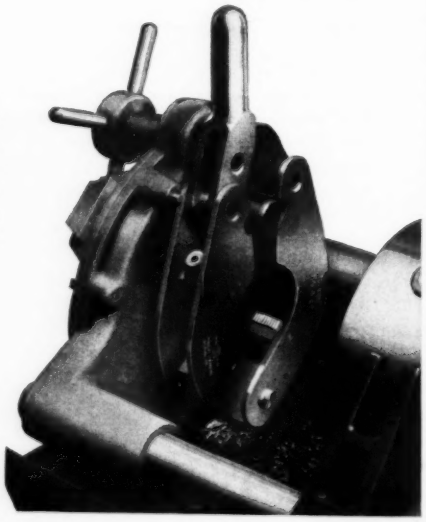
Experienced contractors depend upon "TOLEDO" equipment to handle their piping jobs, for they know from experience that there is no other equipment on the market today that will produce such satisfactory results.

## THE TOLEDO PIPE THREADING MACHINE COMPANY

**TOLEDO, OHIO** **New York Office: 72 Lafayette St.**



Here's the new "TOLEDO" Quick-Opening Die Heads for "TOLEDO" No. 999 and No. 1000M ½ to 2 in. Power Pipe Machines. Lift the handle, and the dies open up. Instantly pulled off the thread. Faster, more efficient, and perfect threads.



"TOLEDO" TRADE-MARK REGISTERED

**QUICK THREADS**
**Life-Time Connections**

# Between Ourselves

### *He's Getting Orders*

"I sent a letter to 300 customers and 500 prospects and the results are very gratifying," one of our readers reports. His letter told of the savings to his customers made possible by low prices for materials and the new low scale for labor. Our reader goes on to tell us of three orders that followed and of a bid he was turning in. A postscript reported another call for an estimate after he had written the letter. "I am convinced that people will now listen to price reductions."

### *A New Sales Weapon*

Talks with readers in the past few days have convinced us that a new spirit of confidence and determination is sending the plumbing and heating contractor back to his old customers and after new ones. The price level for materials and for installation gives him a sales weapon he can and is using.

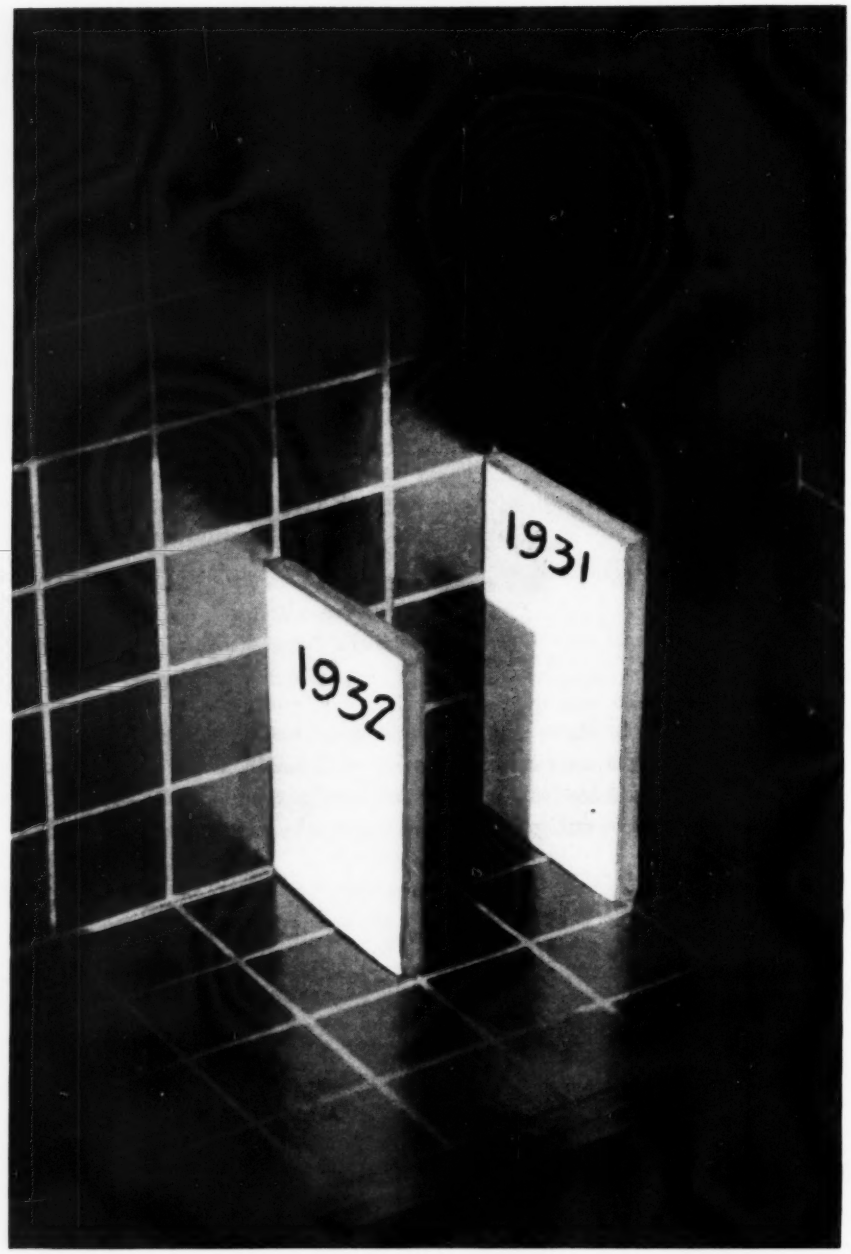
### *Send Me Your Sales Letter*

When you turn over this page, you will find several letters from contractors who have jumped in early to build sales on this new foundation. Many others are starting. Send to the Editor of DOMESTIC ENGINEERING a copy of your own letter and help us to help our readers cash in on today's opportunity.

### *Thank You*

This issue is balanced like a menu, something for each reader in a directly helpful way; suggestions for building sales, outlines of an important engineering trend in plumbing, and in air conditioning, and in heating. It's the kind of diet which leads J. J. Hall of Brockville, Ont., to "wish to add my words of congratulations to DOMESTIC ENGINEERING through which we receive much splendid information." The same to you.

*Your Editor*




HERE'S a new kind of chart and it tells you just one of the sales advantages offered in 1932 compared with 1931. The effect of reductions in labor now being made are compared in the heights of the two white blocks. The labor cost on the same volume of construction as in 1931 will only be as much as the smaller 1932 block. In figures, 1931 had a building volume of $3,000,000,000 of which labor is estimated to have been paid $1,500,000,000. Now $1,200,000,000 or $300,000,000 less will do the same job. The widths of the blocks are the same, representing an equal volume of construction, that is, the 1931 total of 367,000,000 square feet.

# Start Sales Drive on Low Cost of Labor and Materials

PLUMBING and heating contractors throughout the country are finding and using a new sales weapon. Cuts made during the past few weeks in the pay of labor has been the spur to efforts to show customers that real savings are possible now in the cost of new and remodeling work.

This lower charge for labor supplements the previous reductions carried out over a number of months in the prices for materials. As one contractor, in a letter reproduced on this page puts it, the average plumbing and heating contractor would be busy if his customers appreciated how cheaply work can now be done.

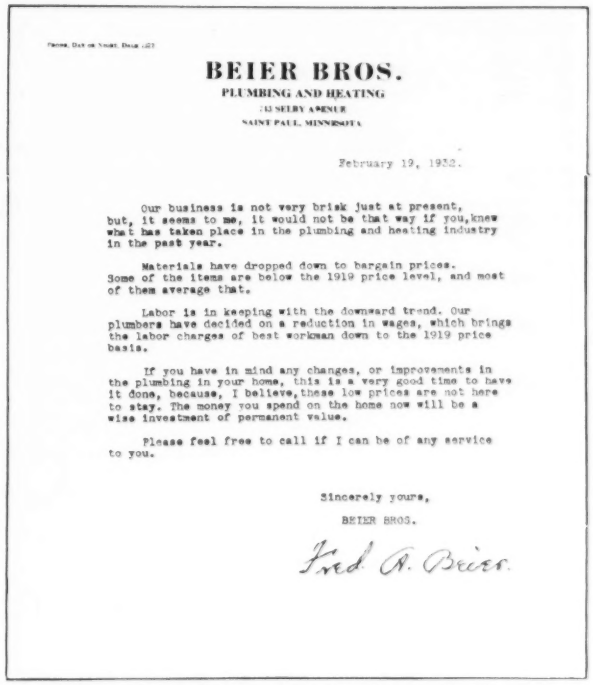
With business sentiment distinctly better, with credit and confidence returning to banks and investors, the next few weeks offer the contractors a new privilege in combing over their lists of old customers and going after new ones. The opportunity to recover work which has been going to the handy man with a low price, the chance to interest the many home and building owners who are regaining the confidence necessary to spending their money now that it will buy so much more, all of this unites to strengthen the determination of those contractors who are out now after such business and will inspire many more.

The movement to lower building wages commenced to gain momentum several months ago and now there is hardly a section of the country that has not felt its effect in some way. A significant factor is that practically all of these reductions are voluntary on the part of the mechanics. It is estimated that this will result in a saving of $300,000,000 in the cost of labor on construction work in 1932. This, coupled with the greatly reduced prices on materials, brings building costs to the lowest level in many years.

A recent bulletin of F. W. Dodge Corp. says "In about 15 cities of 100,000 or more population, wage reductions have already been amicably effected. In most of these cities other needed deflation has already taken place; hence these cities are likely to show first signs of revival." Among the cities in this list are Rochester, N. Y., Salt Lake City, Utah, Nashville, Tenn., Des Moines, Iowa, Grand Rapids, Mich., Columbus, Ohio, New Orleans, La., Wichita, Kans., Memphis, Tenn., Dallas, Tex., Houston, Tex., San Antonio, Tex., and Oakland, Calif.

On March 1, 125,000 building mechanics in Chicago accepted a 20 per cent wage reduction in an endeavor to help stimulate construction work. Definite action on the New York City wage change is expected to take place by May 1. The whole state of Minnesota is now operating on a reduced scale. On March 4, mechanics

(Continued on Page 86)



BEIER BROS.
PLUMBING AND HEATING
[U SELBY AVENUE
SAINT PAUL, MINNESOTA

February 19, 1932.

Our business is not very brisk just at present, but, it seems to me, it would not be that way if you knew what has taken place in the plumbing and heating industry in the past year.

Materials have dropped down to bargain prices. Some of the items are below the 1919 price level, and most of them average that.

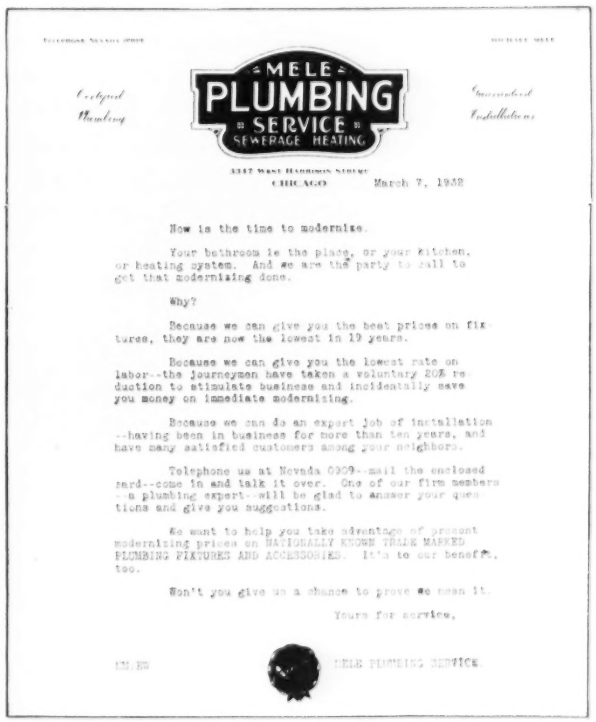
Labor is in keeping with the downward trend. Our plumbers have decided on a reduction in wages, which brings the labor charges of best workman down to the 1919 price basis.

If you have in mind any changes, or improvements in the plumbing in your home, this is a very good time to have it done, because, I believe, these low prices are not here to stay. The money you spend on the home now will be a wise investment of permanent value.

Please feel free to call if I can be of any service to you.

Sincerely yours,
BEIER BROS.
Fred A. Beier

A Minnesota Contractor Uses the New Sales Weapon



Certified Plumbing

MELE PLUMBING SERVICE SEWERAGE HEATING

Guaranteed Installations

[347 WEST HARRISON STREET]
CHICAGO March 7, 1932

Now is the time to modernize.

Your bathroom is the place, or your kitchen, or heating system. And we are the party to call to get that modernizing done.

Why?

Because we can give you the best prices on fixtures, they are now the lowest in 19 years.

Because we can give you the lowest rate on labor--the journeymen have taken a voluntary 20% reduction to stimulate business and incidentally save you money on immediate modernizing.

Because we can do an expert job of installation --having been in business for more than ten years, and have many satisfied customers among your neighbors.

Telephone us at Nevada 0909--mail the enclosed card--come in and talk it over. One of our firm members --a plumbing expert--will be glad to answer your questions and give you suggestions.

We want to help you take advantage of present modernizing prices on NATIONALLY KNOWN TRADE MARKED PLUMBING FIXTURES AND ACCESSORIES. It's to our benefit, too.

Won't you give us a chance to prove we mean it.

Yours for service,

[illegible] MELE PLUMBING SERVICE

And Here's How a Chicago Contractor Is Doing It

**This view shows the opportunity for sprinkler installations in apartment building grounds**

# Opportunities for Spring Profit in Sprinkler Work

By CLARENCE E. BAKER

SPRINKLER work, including not only the piping for lawns and grounds surrounding residences but such related opportunities as sport grounds, orchards, truck farms and all places where a definite and controlled supply of water is necessary for the protection of plant life, has become of increased interest to the plumbing dealer. From acceptance some years ago as the privilege only of the rich, sprinkler systems have won their place as a convenience with more moderate priced homes and a necessity for the truck farmer, the gardener, the golf club.

In earlier issues, DOMESTIC ENGINEERING has given its readers definite information on sprinkler piping for residence work. Other branches of the subject will be covered in later articles. To the contractor alert to spring business, the truck farm is worthy of investigation and the following article through its description of a typical installation brings out clearly the engineering problems met in this class of work.

The limiting factor in the production of many agricultural crops is insufficient moisture to promote optimum growth and production. The lack of adequate rainfall at critical periods in the growth of horticultural crops frequently spells ruin for the produce and loss of money for the grower. Herein lies the opportunity for the plumbing contractor in selling and installing sprinkling systems.

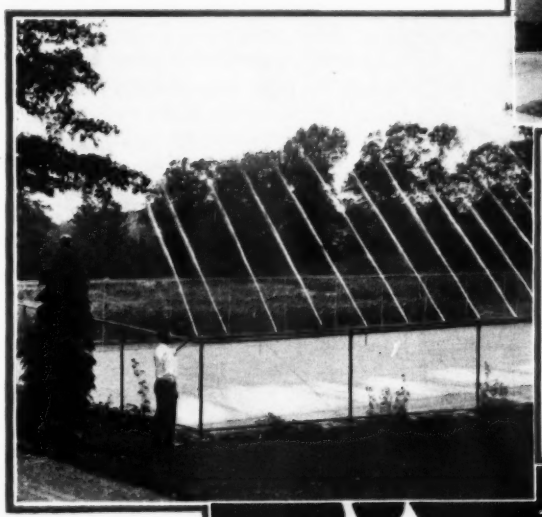
Irrigation in its various forms has been practiced since ancient times as a means of overcoming this difficulty. From the crude but ingenious methods used by the ancient races has come a highly developed operation that makes growers of fruits and vegetables practically independent of natural rainfall. This system is known as overhead irrigation or sprinkling and has the obvious advantages over furrow or flooding irrigation of being more adaptable to numerous crops and more like natural rainfall in its action and in the results secured. Also it is more efficient in its use of water, which often is an important factor in the case of a limited water supply.

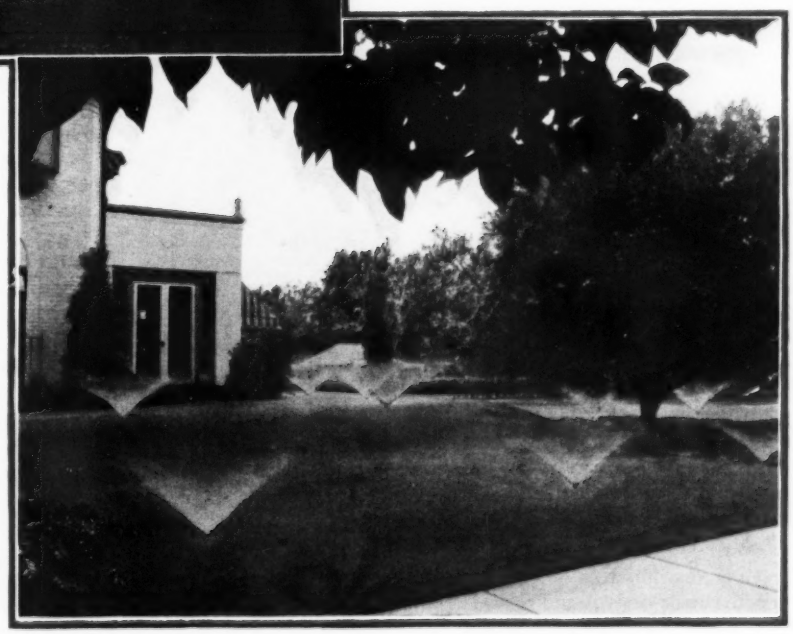
A typical installation of this highly developed form of overhead irrigation is found on a fifty-acre truck farm just at the edge of the city of Indianapolis, Indiana. The owner of this farm operates forty acres under irrigation in such a way that he is able to control his moisture supply at all times. By the use of this system he has been able to grow an exceptionally high type of produce that sells at profitable prices against great competition.

This installation comprises a total of some 20,000 ft. of overhead piping with the necessary underground mains and other supplementary equipment. In the installation of such a system numerous problems naturally present themselves and the success of the project depends upon the manner in which these problems are

solved. The original irrigation equipment was installed several years ago. At that time the method was comparatively new and undeveloped and no electricity or water pressure was available in the neighborhood. The original pumping equipment consisted of a gasoline engine and a piston pump. Later a Diesel engine was installed, as the increasing number of irrigation lines necessitated greater amounts of water. Still later electricity was used and new pumping equipment was secured.

At the present time the owner has twenty-five acres of permanent sprinkler irrigation and fifteen acres of portable lines. The permanent lines of pipe are installed upon wooden posts, the pipe resting on roller bearing hangers set in the top of each post, which are approximately 12 to 15 ft. apart and carefully aligned. The pipe contains small nozzles at 36-in. intervals, which are designed to discharge the water in a fine stream that will break into a fine spray at a little distance from the line.





**The illustration at the top of this page shows a sprinkler installation of the overhead type, made in a truck garden. Below it and to the right is a type of sprinkler adapted to certain residential requirements**

**At the left center is shown an overhead sprinkler job used in keeping a tennis court in condition. This indicates the application of such work to sport activities. The lower left view shows sprinklers on a private lawn**

**Above is shown one of the first operations in installing an overhead sprinkler job for a truck garden and at the right is the second operation**

The entire irrigation line turns through an arc of nearly 180 degrees in order to cause the spray to reach an equal distance either side of the line. The lines may be set by hand by means of a hand turning union to irrigate a certain strip of soil, but all lines are equipped with automatic oscillators operated by water pressure which cause the line of pipe to oscillate back and forth through the arc for which it is set, so that all parts of the ground are irrigated uniformly. The arc through which the oscillator operates may be varied to compensate for wind drifting of the spray or other factors that tend to cause an unequal distribution of moisture.

The portable lines can be disconnected from the feeder pipes, uncoupled into convenient lengths and moved from place to place as occasion demands. When in use they are set on movable supports, also equipped with roller bearing hangers, so that the oscillation of the entire line may be accomplished with the minimum friction resistance. The sections of pipe are interchangeable and self aligning through the use of a union which keeps the nozzles perfectly aligned regardless of the length of the line assembled. These features make the system very adaptable to changing operation requirements.

The basic problem faced in making the installation was that of securing an adequate supply of water and in distributing it to the various parts of the farm where irrigation was to be used. This was solved by digging open wells, as it was found a relatively high water table existed beneath the soil. To operate the present equipment there are two wells. The largest well is 22 ft. deep and is made of concrete sewer tiles, 9 ft. in inside diameter, which are erected in place, to confine the water. In this well water normally stands about 3½ ft. deep. During the pumping of a full load the water level falls to 18 in., at which height it remains. In wet years the normal depth somewhat exceeds 3½ ft., but a shortage of water has never occurred.

The optimum pressure for operation is thirty-five pounds in the pipe. With this pressure the spray is broken up into about the proper degree of fineness. At 35 to 40 pounds pressure the distribution of water will be approximately 7 gallons per minute per 100 ft. of pipe and the variation in the sprinkling rate between one end of a line of considerable length and the other will not exceed 2 to 3 per cent, if the pipe is properly graduated and nozzles of different sizes used, as will be described later.

A centrifugal pump of about 12,000 gallons per hour capacity, directly connected with a 7½-horsepower motor, maintains a pump pressure of 35 to 45 pounds and operates simultaneously four to five lines, each 510 ft. long. If the pressure falls below 30 lb. at the pump the water discharged from the nozzles is not properly atomized, causing it to fall on the ground in large drops, which is undesirable, and causes packing of the soil. On the other hand, if the pressure is carried as high as 50 or 60 lb. at the pump the water is so finely broken up as it is discharged that it will drift away on even a moderate breeze. The optimum pressure is generally secured by the amount of piping set in operation.

The mains leaving the pump are of 3-in. pipe, reducing to 2½- and 2-in. pipe towards the ends of the mains. Two-inch pipe is used as risers. The mains and feeder lines are placed underground at a very gradual rise from the proximity of the pumping station. The major portion of the rise of 6 or 8 ft. from the level of the pump to the average level of the area served is made

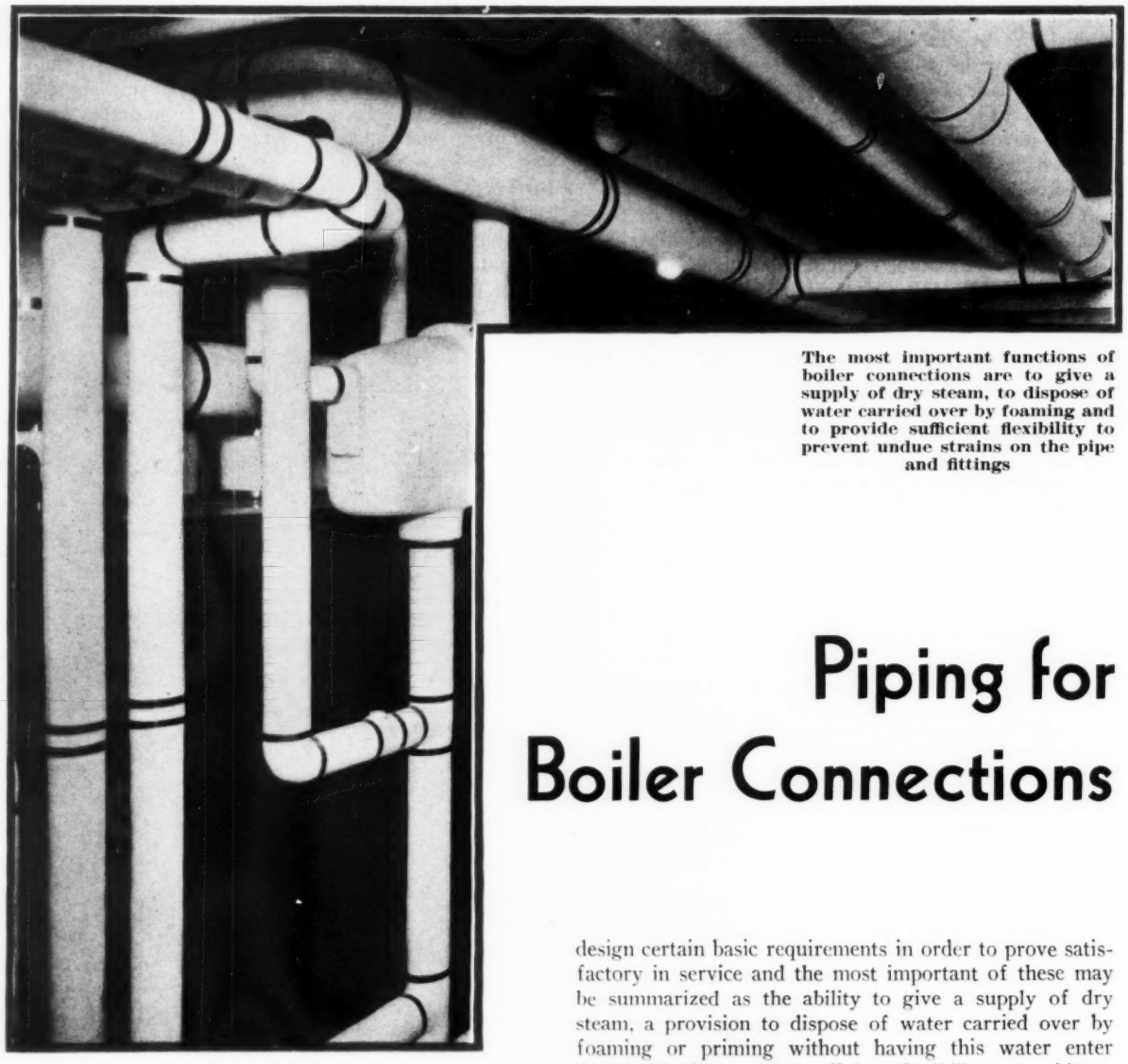
through a vertical pipe near the pump rather than as a gradual rise over a long, moderate grade. This was found by experience to give much better results and to reduce the back pressure against the pump. From this well is operated 25 acres of combined stationary and portable piping in lines of from 310 to 510 ft. in length. The average vertical lift from well to pump is about 15 ft., the pump being placed in a pit below the ground.

A smaller well, 30 ft. deep, operated with an electrically driven piston pump, serves an additional 15 acres of permanently erected pipe in lines of 210 to 420 ft. in length. This piston pump has an approximate capacity of 4,500 gallons per hour to give a pressure of 30 to 35 lb. in the lines. This pump and motor are also placed in a pit some 8 ft. deep to reduce the vertical lift between well and pump. The mains from this pump begin with a 2½-in. pipe, reducing to 2-in. at about two-thirds the length of the mains. On this class of work it has been found an inefficient practice to use smaller than 2-in. pipe for any mains, feeders or risers.

The lines of irrigation pipe are placed from 50 to 54 ft. apart, at which distances the entire ground area can be irrigated at will, as the spray from each line carries 25 to 30 ft. in either direction without difficulty, except in the case of adverse winds. The pipe lines are placed in a direction that takes advantage of the prevailing winds. The individual lines vary in length from 210 to 510 ft. All permanent lines are placed on wooden posts, as previously described, beginning at a height of 5½ ft. at the riser and lowering toward the opposite end to take advantage of gravity in equalizing the pressure in the more distant portions of the lines. Where conditions permitted, this fall was set at 6 in. per 100 ft., which was found through various trials to be about right. Because of the lay of the ground the maximum fall that could be obtained in some cases was 18 in. per 400 ft. of line, but this aided greatly in securing even distribution. No benefit was found in placing the lines more than 5½ ft. above the ground.

Pressure equalization throughout the length of the individual lines also was obtained by varying the size of pipe and the size of the nozzle openings used. In the early years 2-in. pipe was installed at the start of the irrigation lines, but it was found that equally good results were obtained by using 1½-in. as the largest size. From an operating standpoint, naturally, it does not pay to select a size of pipe below certain minimum requirements, because of the increased friction factor in the smaller pipe. After numerous experiments it was found that on a line approximately 500 ft. long the best combination was 200 ft. of 1½-in. pipe, followed by 150 ft. of 1¼-in. and 150 ft. of 1-in. pipe. On a line of 400 ft., 150 ft. of 1½-in. pipe, 150 of 1¼-in. and 100 ft. of 1-in. pipe gave what was found to be an efficient combination.

**The third operation in the truck garden installation is shown above. The pipe is being drilled and tapped for the spray heads. At the left is a view of one of the final assembly operations**



**The most important functions of boiler connections are to give a supply of dry steam, to dispose of water carried over by foaming and to provide sufficient flexibility to prevent undue strains on the pipe and fittings**

# Piping for Boiler Connections

NO ARTICLE in the heating industry has been piped up in so many different ways as the long suffering low pressure steam boiler; that it has functioned under many of the unusual piping schemes employed may have led to the idea that such a boiler will give steam under almost any condition. It is high time, however, that some recognized method was selected and used as a general standard with only such modifications as the individual space conditions and headroom make imperative. In picking out such a method thought must be given to the fact that it should be flexible enough to accommodate itself to the conditions often encountered in the boiler room, should not be unnecessarily expensive to install, and must give satisfactory results after it is put into service.

Boiler connections must have incorporated into their design certain basic requirements in order to prove satisfactory in service and the most important of these may be summarized as the ability to give a supply of dry steam, a provision to dispose of water carried over by foaming or priming without having this water enter the distribution system, sufficient flexibility to avoid undue strains on the pipe, fittings or boiler, protection of the boiler from what is frequently termed "losing its water" and the maximum faculty for accommodating low headroom. Against this must be considered the matter of first cost because good engineering does not necessarily mean to see how much money can be spent but rather to see how much permanence and service can be obtained from the amount which is spent, be it big or little.

Owing to the fact that steam pressures in the modern heating system are low and show all the symptoms of going lower, the volume of steam to be handled on low pressure heating systems is on the upward slope and for this reason all the steam outlets on low pressure heating boilers should be connected up full size to avoid objectionably high velocities. High velocities at this point have two disadvantages; first they cause a drop in steam pressure and, second, they are liable to draw water up out of the boiler and to carry this water over with the steam into the boiler runout. It may be news, to some, that certain engineers specify low pressure steel heating

boilers to have two outlet nozzles, as indicated in Fig. 1, instead of the single outlet usually provided just on account of the desire to avoid these high velocities and their accompanying objections.

From this it appears that a proper low pressure steam boiler connection must not be made to bushed outlets and that all outlets must be used and none plugged as is often actually done in competition installations. More than that, the uptakes from these outlets must run high enough to give a reasonable opportunity for the water which may be entrained with the steam to separate and fall back into the boiler. No one can state positively just what this distance should be beyond the fact that the higher, the better, as long as the height is kept within reason. Probably 4 ft. is about as short a vertical uptake as should be used in good steam practice; see Fig. 2. The use of a short nipple and an elbow almost on top of the boiler, as shown in Fig. 3, is decidedly poor piping.

At the top of the runout a horizontal pipe should be connected to carry the steam over to the boiler runout. Now this horizontal pipe does not require to be as large as the vertical uptakes from the boiler outlets owing to the fact that all the separation of moisture (that can take place) has done so in the vertical, provided that the vertical pipe has been made the full size of the boiler outlet and that all boiler outlets have been used as suggested above. Therefore the horizontal pipe may be sized in accordance with the pipe sizing schedule used for the distribution piping with the assurance that no more pressure drop occurs in this line proportionately than in any of the other pipe in the system.

Thus, if a boiler with a 4,000 sq. ft. load had two outlets to be piped, the horizontal pipe could be sized on the basis of carrying 2,000 sq. ft., if there were two tappings on the boiler and on the basis of carrying 1,350 sq. ft., if there were three steam outlets on the boiler. This horizontal pipe could best be connected to the larger uptake pipe from the boiler steam outlet by means of a reducing 90 degree ell which makes a neat and workmanlike job. (See Fig. 4.) At the end of the horizontal pipe an elbow looking down should be used so that if any water should be carried up into the steam line due to foaming or priming, this water would not have to find its way back into the boiler by flowing against the steam. (See Fig. 5.) On the contrary this

By
H. T. HALL

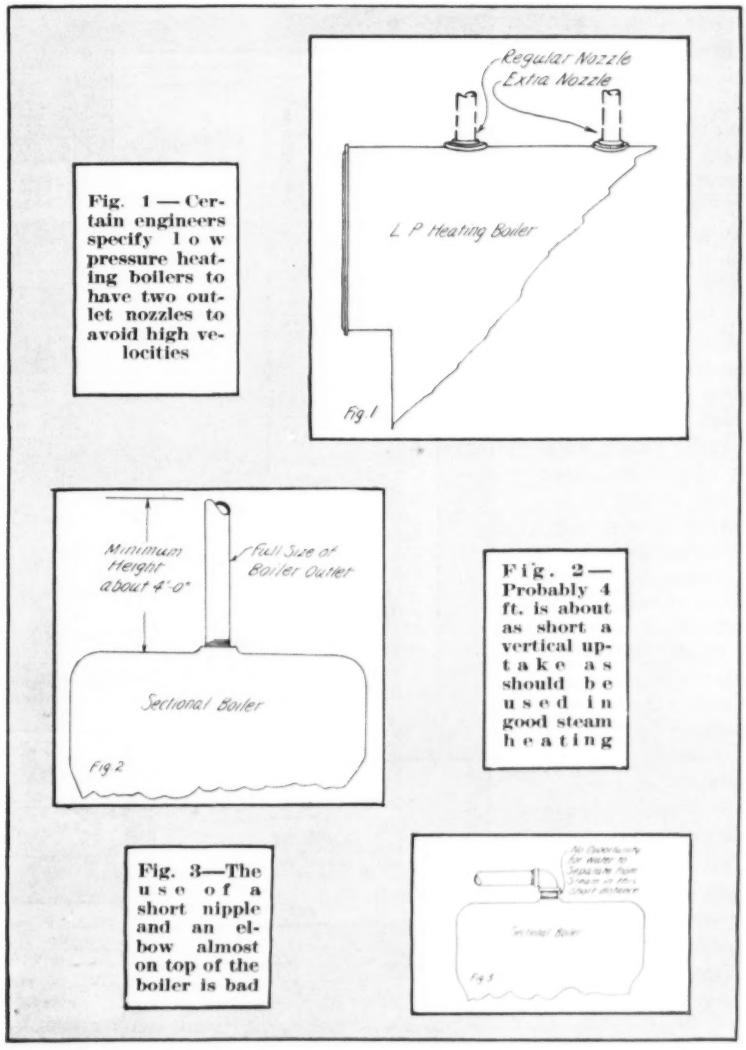



**Fig. 1 — Certain engineers specify low pressure heating boilers to have two outlet nozzles to avoid high velocities**

**Fig. 2 — Probably 4 ft. is about as short a vertical uptake as should be used in good steam heating**

**Fig. 3—The use of a short nipple and an elbow almost on top of the boiler is bad**

water should be carried along with the steam and should be emptied down into the boiler runout which will be taken up next.

The boiler runout may be sized on the same basis as the horizontal pipe but it must not be forgotten that the runout carries all the steam from the boiler and on, say, a 4,000 ft. boiler, the runout would have to be sized on the basis of 4,000 sq. ft. At one end of the runout, a drain and equalizer pipe should be installed so that water carried into the runout from the boiler quickly will find its way back into the boiler without difficulty. This may be accomplished by turning down the rear end of the runout and carrying a balancing or equalizing steam pipe down to the top of the Underwriters Loop on the return which loop will be considered later on in this article. This balancing pipe is required to be not less than 1½-in. pipe for boilers with a grate area of 4 sq. ft. or less, 2½-in. pipe for boilers with grate areas between 4 sq. ft. and 15 sq. ft., while over 15 sq. ft. this pipe must be 4 in. in diameter.

At the other end of the runout the connection is made to the boiler header usually through an elbow looking down which connects with a tee looking up on the boiler header through a comparatively short nipple. No valves are required on the runouts from low pressure steam boilers unless there are two or more boilers to be considered (See Fig. 6).

One of the most disputed points in boiler piping practice is the required size of the boiler header and the writer maintains that many boiler headers are so oversized as to prove a detriment rather than a help to the operation of the system; the arguments in favor of a large size boiler header may be summed up in the matter or capacity for sudden heavy loads, which is a left-over from the old high pressure power systems where the power load might be applied suddenly and has nothing to do with the operating load of a heating plant where the load changes gradually with the rise and fall of the outside temperature. It also may be proven that the extra storage capacity of a boiler header, secured by increasing the diameter two or three pipe sizes over that actually necessary, is not sufficient to carry the radiation load in the building for even the small space of five minutes without a drop of five pounds or over in the pressure.

There are several good arguments against the oversize boiler header in the heating plant these consisting of the additional first cost, the extra amount of air which such a header will accumulate during times when the steam is down, and the system fills up with air, and the added quantity of steam which must be generated to fill this larger header before it passes out into the distribution mains feeding the building. On a low pressure steam heating system it is quite ample to size the boiler header on the same basis as the distribution steam mains but ample opportunity for good drainage must be provided to take care of any water that may escape all the pitfalls set for it and still be carried over into the boiler header.

The best way to do this is use two full size tees or ells with the outlet facing down and put a blank flange on the bottom of the outlet with a tapping for a drip connection made in this flange. The pocket formed by the tee or ell outlet serves as a small receiver into which the water may run and collect if it happens to come along in the shape of a slug so that the drip connection cannot take care of it all at once. (See Fig. 7.)

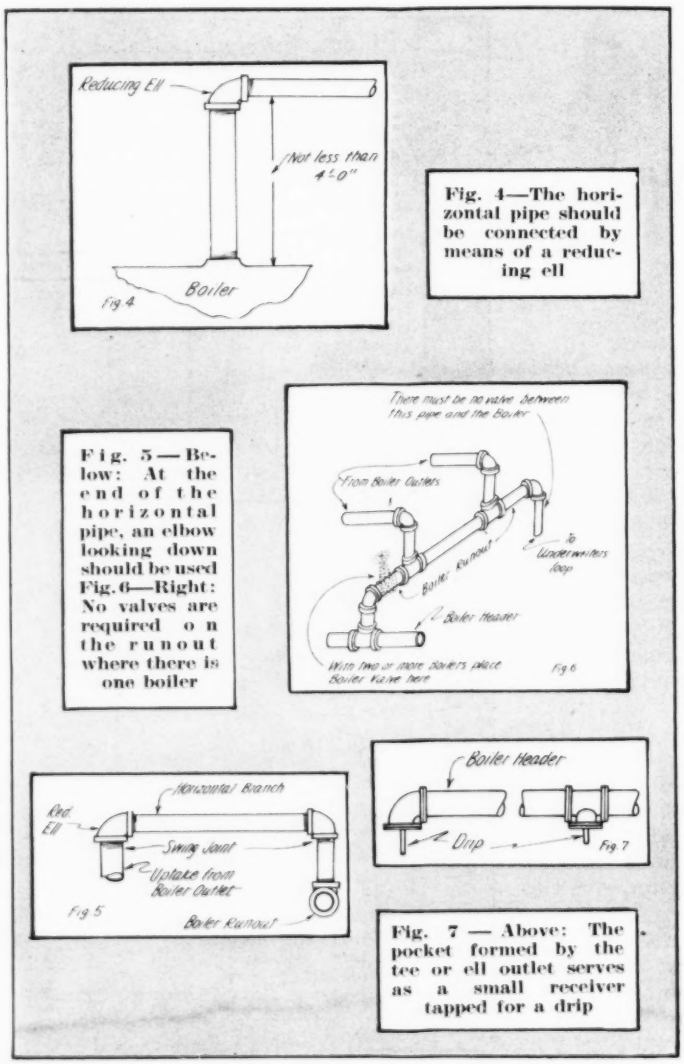


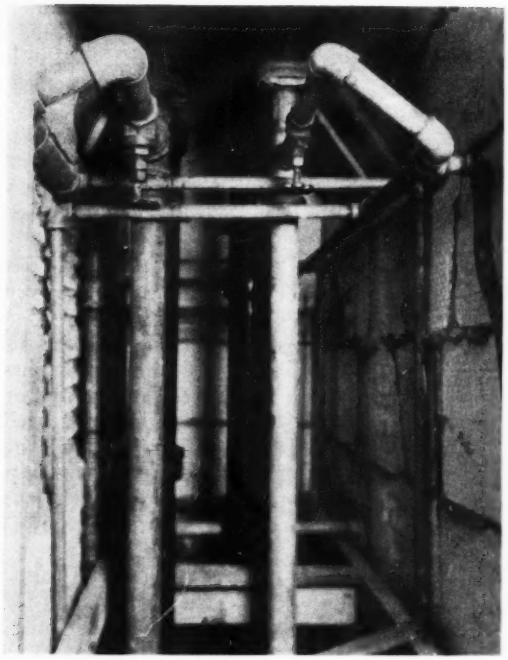

**Fig. 4—The horizontal pipe should be connected by means of a reducing ell**

**Fig. 5—Below: At the end of the horizontal pipe, an elbow looking down should be used Fig. 6—Right: No valves are required on the runout where there is one boiler**

**Fig. 7 — Above: The pocket formed by the tee or ell outlet serves as a small receiver tapped for a drip**

## BRANCHES FROM THE BOILER

The distribution mains which are branched from the boiler header should be taken out of tees located on the header and looking up into a nipple on top of which is placed a 90-degree ell connection with the horizontal main through a gate valve.



# New Practice in Plumbing

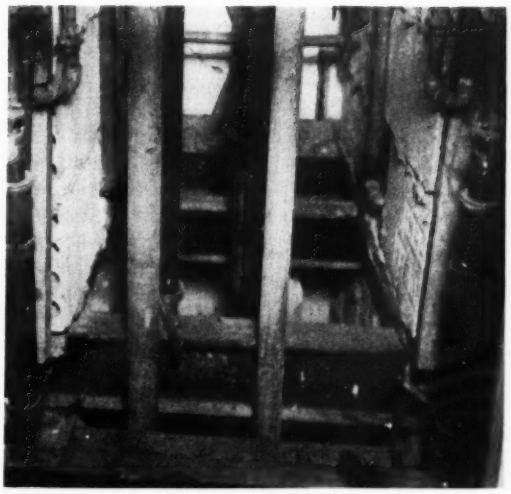


Fig. 1—This split photograph shows the so-called utility shaft serving tiers of bathrooms arranged back-to-back in a hotel

By R. M. STARBUCK

A TYPE of plumbing construction is now being specified by some of our leading architects. This has certain qualifications which are very desirable.

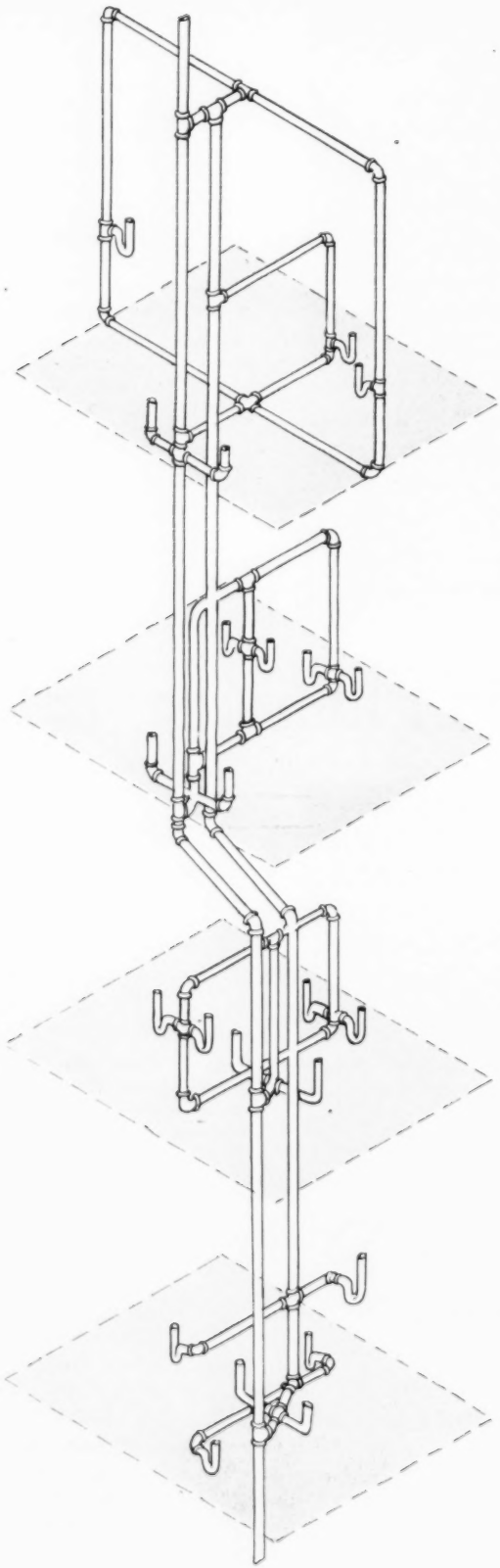
The method that we are going to describe is particularly applicable to bathroom stacks in hotels and apartment buildings, where the bathrooms are on a considerable number of floors, one above the other, and particularly where two bathrooms back up to each other on each floor.

According to Chas. S. Kulp, plumbing inspector of St. Petersburg, Florida, several of the large hotels in that city have installed their bathrooms according to this method, and we had the opportunity of inspecting this work in one of these hotels.

Briefly, the plan is to run a shaft between the two lines of bathrooms, and to install all the connections for the bathrooms in this shaft.

This utility shaft, if it may so be called, holds the soil and vent stacks, the waste and vent connections for each of the fixtures, also the main supply lines for the lavatories and bathtubs and their branches, and the main lines and branches for the flush valves.

Fig. 1 will help to show the idea of these shafts, and the equipment which they house.



This does not show the connections as clearly as we might desire. The I-beams and cross pieces are in such position as to largely conceal the fixture connections, but nevertheless the general idea will be easily taken in.

At the front of the picture, and on either side in Fig. 7, the end of a bath tub projects through the wall, and is in full sight in the shaft. A study of the view will show the overflows and the supply connections for the bath tubs.

Far back in the picture and branching to the right and left are to be seen the lead waste connections for the lavatories.

The soil stack and vent stack are seen partially hidden by the main supply lines for the flush valves, etc.

There are a dozen or so of these shafts in this hotel, serving something like 250 bathrooms.

A door of regular dimensions opens into the shaft at each floor, making repairs a thing of ease. It is not difficult to see that construction of this kind is ideal for this particular type of work. Instead of taking up a section of tile floor to get at a difficulty, it is instantly accessible and in full view in the shaft.

The shaft is used for ventilation purposes also. Each bathroom opens into it through an opening near the ceiling. In front of each of these openings a deflector is placed, which helps to give the air an upward turn as it issues from the bathroom. These deflectors can be seen in Fig. 1. The ventilation in this particular installation is very positive.

The supply risers and branches, both hot and cold, also circulation riser, are to be seen in Fig. 1. Each bathroom is separately valved.

We have stated that Fig. 1 is a picture taken of a hotel job in St. Petersburg, Florida. A very good idea of the method of connecting these double lines of bathrooms, as followed in this particular city, may be seen in Fig. 3.

This is an interpretative drawing prepared by the plumbing inspector for the purpose of giving a general idea of the method of connecting the bathroom fixtures for four different common locations of the fixtures. The bathroom floor plans showing these locations are at the right of the plumbing elevation in Fig. 4.

It should be stated that in this drawing nothing is to scale, and the drawing is not intended as a perfect reproduction. However, the intent of the drawing is to show the general method of connections, and the effort is successful, for it gives a clear picture.

We thought it a good opportunity to show in comparison to such a drawing as Fig. 3, a drawing worked out under the accurate, definite principles on which isometric drawing is based. Therefore, in Fig. 2, we show an isometric drawing of the same four bathroom layouts illustrated in Fig. 3.

The inspector's drawing shown in Fig. 3 might have been worked out as four separate elevations, each show-

(Continued on Page 48)

**Fig. 2—Here is an isometric drawing of the plumbing connections shown in Fig. 3 and indicated in Fig. 4. The blue color is used to accentuate the isometric features to make them more easily understood**

# Application of Refrigeration to Heating and Cooling Homes

By A. R. STEVENSON, JR., F. H. FAUST AND E. W. ROESSLER

THE possibility of using a refrigerator as a heat pump to heat houses was first suggested by Lord Kelvin in a paper presented before the Royal Society in 1852. There has been a considerable amount of interest in this idea since its revival in 1926.

During this present winter, a large-size installation is being tried out by the Southern California Edison Company in Los Angeles, California. Four 200 h.p. synchronous motor driven compressors have been installed to cool the building in summer, and are being used to heat the building in winter when the outdoor temperature is 42 deg. Fahr. or higher. When the outdoor temperature goes below 42 deg., it is their intention to use electric resistance heaters.

It is not intended, in the present paper, to go deeply into the theory of refrigerating machines. Attention is simply called to the fact that a refrigerating machine is a heat pump. A pump is defined in the dictionary as a mechanical device for raising, circulating, exhausting, or compressing a fluid. Strictly speaking, there is no such thing as a heat pump because heat is a manifestation of energy and, consequently, it is not physically circulated or compressed by a refrigerator. Actually, however, a refrigerator increases thermal potential and by analogy it is easily comprehended as a heat pump. For example, in a large ice plant the input to the motor driving the ammonia compressor is about 43 kw.hr. for each ton of ice produced. The heat equivalent of 43 kw.hr. is 147,000 Btu. The amount of heat which must be removed from one ton of water at 32 deg. to transform it into ice at 32 deg., is 288,000 Btu. Thus, by an electrical input equivalent to only 147,000 Btu., it is evident that at least 288,000 Btu. were extracted from the water at 32 deg. Fahr. The coefficient of performance of this ice plant as a refrigerator is therefore at least 1.96. It is also unnecessary to tell refrigerating engineers that the heat given off in the condenser is approximately the sum of the heat absorbed from the ice plus the heat equivalent of the input to the motor. The coefficient of performance of this ice plant used as a heater is therefore 2.96. In other words, the ice plant delivers almost three times as much heat to the condenser as the heat equivalent of the electric input to the motor.

At first glance, this might look like perpetual motion, but the possibility of accomplishing this energy transfer of 288,000 Btu. with the expenditure of only 147,000 Btu., is theoretically justifiable from Carnot's principle, which was formulated in 1824. A refrigerator may be regarded as a reversed Carnot engine in which heat energy is absorbed at temperature $T_1$ and dissipated at temperature $T_2$, as a result of mechanical work done. The coefficient of performance of a perfect machine would then be given by the formula:

$$\text{c.p.} = \frac{T_1}{T_2 - T_1} = \frac{\text{Refrigerating effect at } T_1}{\text{Heat equivalent of work done}}$$

In the above formula, c.p. is Carnot's coefficient of per-

This article consists of excerpts taken from a paper which was presented at the 27th annual meeting of the American Society of Refrigerating Engineers, recently held at Cleveland, and reprinted from **Refrigerating Engineering**, February, 1932.

formance, and the temperatures are expressed in degrees absolute. A temperature difference is necessary for a transfer of heat, and in an ice plant the ammonia would have to be about 10 deg. Fahr. in order to freeze ice rapidly at 32 deg. Fahr. The heat pumped out of the ice would probably be delivered to the surrounding air through a cooling tower which would very likely run at a temperature of about 110 deg. Fahr. Then:

$$T_1 = 10 + 460 = 470$$
$$T_2 = 110 + 460 = 570$$

Substituting these figures, the Carnot theoretical coefficient would be

$$\text{c.p.} = \frac{470}{100} = 4.7$$

It is thus seen that the ice plant which had a coefficient of performance of 1.96—which, at first glance, looked impossible—was only half as efficient as a theoretically perfect reversed heat engine would have been, operating between the same temperatures.

The coefficient of performance as a heater is always one unit larger than the coefficient of performance as a refrigerator.

In an attempt to explain this paradox for electrical engineers, in a paper on refrigeration, an electrical analogy was given.

An hydraulic analogy would be as follows: Consider a reservoir of water 50 ft. above the ground and another reservoir of water 10 ft. below the level of the ground. A quantity of water at the ground level is required. If we allow water from the 50 ft. elevation to flow down directly, the only water received at the ground is that which came out of the 50 ft. reservoir. This corresponds to the direct conversion of electricity to heat. If, however, we allow the water at the 50 ft. level to flow down through a perfect turbine waterwheel which is connected to a perfect pump, the power developed when 1 cu. ft. of water flows through the waterwheel from the 50 ft. level will be sufficient to pump 5 cu. ft. of water up to the ground level from the lower reservoir 10 ft. below the ground. With this arrangement, for every cubic foot of water that flows from the principal reservoir, 6 cu. ft. of water are received at the ground level.

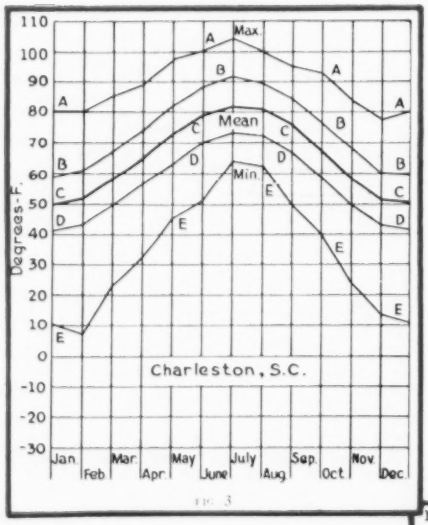



FIG. 3

**Fig. 1—Left: Thirty-one year monthly temperatures. AAA — Maximum ever recorded during month. BBB — Mean (CCC) plus one-half average daily variation. CCC —Thirty-one year mean temperature. DDD — Mean (CCC) minus one-half average daily variation. EEE — Minimum ever recorded during month**

**Fig. 2—Below**

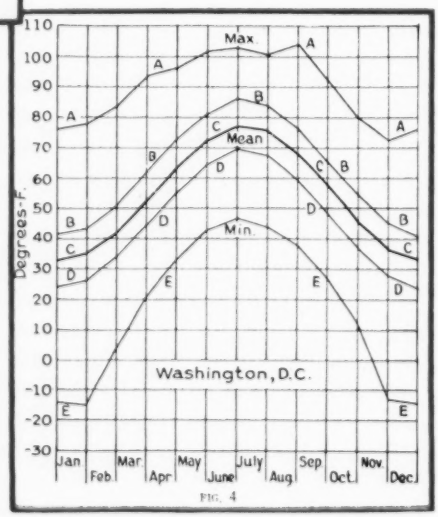



FIG. 4

## REASONS FOR SLOW PROGRESS

In view of the fact that the coefficient or ratio of performance of a refrigerating machine is always greater than one for heating, and may be theoretically as high as 8 for operation between 45 deg. Fahr. and 100 deg. Fahr., why is it that this method of heating has not been in commercial use since it has been known and recognized ever since the days of Lord Kelvin? The following may be some of the principal reasons:

1. No suitable refrigerating machine with the necessary characteristics of safety, quietness, lack of vibration, freedom from service, and high efficiency, has been developed in sizes 5 to 25 h.p. Machines of this size have been bulky and lacking in automatic features.

2. The cost of electricity in most localities has been too high until recently to make this method of heating compare favorably with existing methods. Perhaps we have been somewhat blind to the economic possibilities already here with the gradual introduction of lower rates for electric ranges, hot water heaters, and domestic refrigerators.

3. Very little has been known of the actual operating costs of a refrigerating heating system because of the special nature of the refrigerators and auxiliary equipment needed, and the careful study of climate requirements which is required to predict their performance.

4. Very little has been known of the first cost of equipment for heating and cooling electrically because of the special nature of the equipment, but it seems fairly certain that it will be considerably higher than the first cost of most of the conventional methods now in use.

5. People have not yet been educated to the needs of air conditioning, including refrigeration. Until they demand cooling equipment, there is little or no advantage of supplying refrigerating equipment for heating only.

In most methods of heating houses, the efficiency of the heating devices is more or less independent of outdoor temperature. More heat is required on cold days, but the efficiency of the source of heat is not impaired by the lower outdoor temperature,

and, in many cases, is higher under these overload conditions than when the heating plant is only lightly loaded in milder weather.

This is not the case, however, when the electric heat pump is used to pump heat into the house, if we use as a source of heat the outdoor air which is an obvious and universal source of low-temperature heat that costs nothing except for the fan power required to blow it over the heat transfer surfaces. Of course, if there is a good supply of relatively warm water available, such as the ocean, a river, a lake, or an underground well, from which the heat pump can abstract heat at a temperature more or less independent of the outdoor temperature, this difficulty could be avoided. It is not likely, however, that cities would permit the use of their water supplies for this purpose and, therefore, in most cases the atmosphere would have to be used as a source of heat.

It has been suggested that the latent heat of the water be extracted by freezing it. In Washington, D. C., the amount of ice formed during the winter in heating a 14,000 cu. ft. well-insulated house would be 210 tons, or 7,800 cu. ft., which would make a pile about half the size of the house.

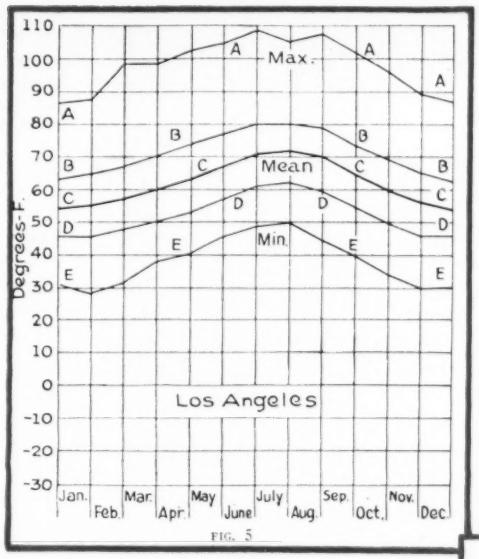


FIG. 5

**Fig. 3 — Above: Thirty-one year monthly temperatures. AAA — Maximum ever recorded during month. BBB—Mean (CCC) plus one-half average daily variation. CCC —Thirty-one year mean temperature. DDD — Mean (CCC) minus one-half average daily variation. EEE — Minimum ever recorded during month**

**Fig. 4—Right**

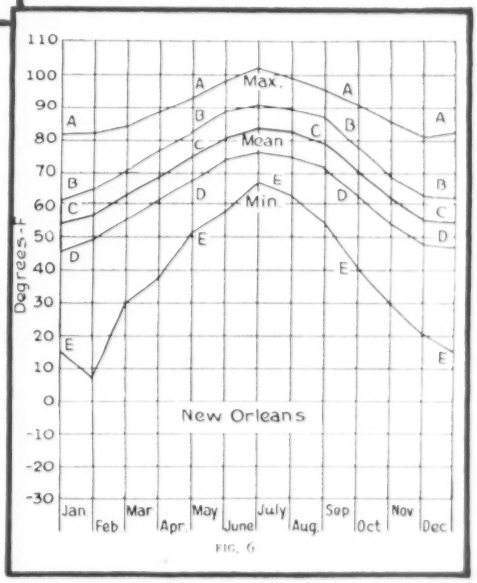


FIG. 6

### WHAT DIFFICULTIES ARE MET

When the outdoor air is used as a source of heat, the size of the machine and the energy consumed in pumping the heat are both very dependent upon the temperature difference. Three difficulties are encountered:

1. The capacity of the machine is reduced on the days when heat is most needed. Therefore, to take care of these overloads encountered during severe cold spells, the machine must be much larger in proportion.

2. The efficiency, when carrying overloads during the coldest weather, is greatly reduced.

3. When the transfer surfaces absorbing heat from out of doors are below the freezing point, frost will collect on them, impairing the transfer of heat.

The first of these disadvantages—namely, that the machine has reduced capacity in cold weather—can be partially overcome in several ways:

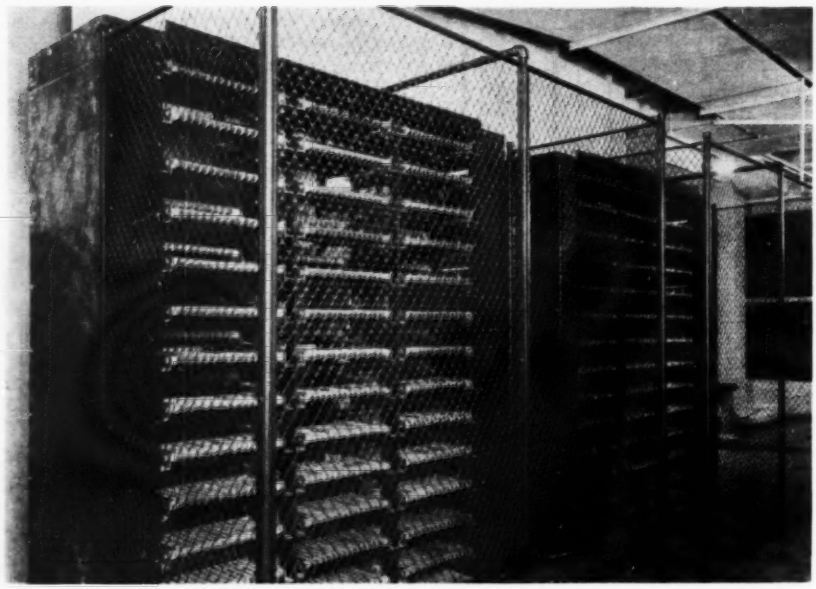
a. The compressor may be equipped with a multi-speed motor which can be run faster in cold weather to increase the capacity of the machine.

b. It might be possible, in mild weather, to store some heat either in large tanks of hot water or in the latent heat of change of state of some material which could be used to help heat the house in cold weather. This storage method could only be relied upon after a very thorough study of the weather, leading to a reliable prediction as to the length and severity of the cold spells through which the heat storage must be used without being completely exhausted.

c. An auxiliary form of heat might be supplied which would only be used in extreme weather. This might be coal, oil, gas, or electric resistance heaters. It is somewhat unlikely that the public utilities would be willing, even at high rates, to furnish either gas or electricity for this type of emergency heating, which would tend to create a bad peak load on their lines.

The second objection—i. e., the low efficiency when carrying overloads—is not so serious as the first one. It may be stated conversely as an advantage—i. e., the efficiency is greatly improved in mild weather, whereas most other heating systems are very inefficient in mild weather. Thus, in a climate where cold spells are short compared with long stretches of mild weather, the advantage of high efficiency during long continued mild weather might more than overbalance the decreased efficiency during cold spells of short duration.

The third difficulty—namely, frosting of heat transfer surfaces—would not be encountered when these surfaces are above freezing; at the other extreme, during very cold weather when the moisture content of the outdoor air is very low, there might not be much trouble due to



**Here are banks of indirect electric heaters located in the supply duct for the lower ventilating system of the Southern California Edison Building in Los Angeles**

frost. But in intermediate temperatures, when the transfer surfaces are just below the freezing point (particularly on foggy days near the critical temperature at which airplane wings collect ice), frost might form very rapidly. The use of a spray tower with brine instead of water would be one way of eliminating this problem of frost, but the brine would be gradually diluted. There are also several other methods, such as intermittent defrosting, flexing the heat transfer surface to crack off the ice, and so on.

It is thus seen that the design of electric heat pump apparatus for heating and cooling houses is very dependent upon operating conditions, and especially dependent upon the climate in which the apparatus is to be operated.

In studying these requirements, it must be borne in mind that the chief advantage of this complicated and high-first-cost type of installaion lies in the combination of heating and cooling. In bringing out a high cost apparatus for this dual purpose, the other aspects of air conditioning should also be included. It therefore seems wise, in the statement of this problem, to include a brief review of air conditioning and then a brief review of the climate in various parts of our country before attempting to specify the proper characteristics for a heat pump installation.

In reviewing this subject, it is interesting to note the prediction of Dr. Charles Proteus Steinmetz, who wrote in 1915, as follows (4): "When heating is done electrically, if I want 70 deg. Fahr. in my home, I shall set the thermostat at 70 deg. Fahr. and the temperature will not rise above that point. This temperature will be maintained uniformly without regard to the temperature outside.

"If it is very cold, electric heaters will hold the temperature at 70 deg. Fahr. If it should be 90 deg. Fahr., or 100 deg. Fahr. outside the same electrical apparatus will cool the air inside. In this way, we shall have a uniform temperature in our homes throughout the year. "Besides temperature, we have to suffer from humidity, or from dryness of the air. This is especially true with the present-day furnace. With electric equipment, we shall be able to control this and have the humidity normal at all times. This electric equipment will have an absolutely automatic control of both temperature and humidity.

"Ventilation doesn't exist in the average home today. At present, we have to depend upon the windows and doorways, or we turn on an electric fan to blow the bad air out. When electricity is developed, we shall have apparatus that will destroy the bad air, bring fresh air into the home, and when the air outside is not sufficiently invigorating, automatically arrange a distribution of ozone. We shall constantly have good, fresh, pure air indoors."

Air conditioning, as applied to enclosures for human occupancy, has been defined as the science of controlling the temperature, humidity, motion, and cleanliness of air to maintain the most suitable conditions of the comfort, health, and happiness of human beings.

The next step in air conditioning with which the present paper is particularly concerned, is the air conditioning of private homes. Already, several methods have been developed for automatically heating homes.

In the study of air conditioning, we are mainly interested in the dissipation of waste heat from the body and its automatic control.

It is an interesting fact that the amount of heat dissipated by the average person is practically constant at 400 Btu. per hr. over a wide range of temperatures and humidities. Under normal conditions of temperature and humidity, Yaglou states that heat is dissipated approximately in the following proportions:

1. Radiation, conduction, and convection..73 %
2. Evaporation of moisture from skin.....14.5%
3. Evaporation of moisture from lungs... 7.2%
4. Warming of inspired air..... 3.5%
5. Warming the food ingested..... 1.8%

When the temperature is raised to 86 deg. Fahr., the radiation and conduction has been shown to drop from 76 per cent to 38 per cent, and the heat dissipation by evaporation from the skin and lungs, to rise from 24 per cent to 62 per cent. Obviously, at approximately 100 deg. Fahr., all the heat would have to be dissipated by evaporation. The above data show that one cannot consider heating and cooling without also considering humidity.

**(To be continued)**

# The Pitch of Drainage and Vent Lines

By R. M. STARBUCK

DID you ever stop to think how important in plumbing and heating operations is the proper grading of pipes?

A pipe having a wrong grade or pitch may easily cause the failure completely or partially, of an otherwise perfect installation. This is true whether we are talking of fixture wastes, drainage or vent lines, ventilation, hot water supply lines or any of the several types of heating systems. Into all these the subject of pitch enters in a very important way.

In this present article we are going to be concerned with the subject only as it relates to drainage and venting.

As a general thing, the greater the amount of pitch obtainable, the more satisfactory the result. This is not always true, however. In some operations in drainage, as we shall see, the matter of pitch or grade has to be handled very carefully, for too much pitch would work out badly.

The point we have just made makes its appearance in running the waste pipe from a P-trap or a waste from a drum trap. The P-trap is much in evidence in continuous venting, as also the horizontal waste from the drum trap.

In Fig. 1 we show these two types of traps correctly connected for a continuous vent installation, and in Fig. 2 the same traps wrongly connected.

A correct connection calls for a horizontal waste between the trap and the vent. This result is attained in Fig. 1, but not in Fig. 2.

This is an extremely important point in continuous venting, and does not seem to be as fully understood among the plumbing trade as it should be.

It is a well-known fact that to destroy the action of a siphon most effectively, air needs to be admitted at the high point or crown of the siphon. When the crown vent first came into use, the vent was taken off the top of the S-trap for that reason.

In the case of the trap that has a continuous vent properly installed, as in Fig. 1, air is admitted at the point where it will be most effective. Naturally, the closer the vent connection is to the trap seal, the more effective the venting is.

In each instance shown in Fig. 2, admission of air is not nearly so direct as in Fig. 1. This is especially true of the ¾ S-trap. In each one of these three trap connections, the further the vent line is removed from the trap, and therefore, the further down the connection is made relative to the level of the trap seal, the less effective the venting becomes.

All of this has to do with the pitch or grade of the trap outlet.

When the condition becomes more extreme, we have such connections as those shown in Fig. 3.

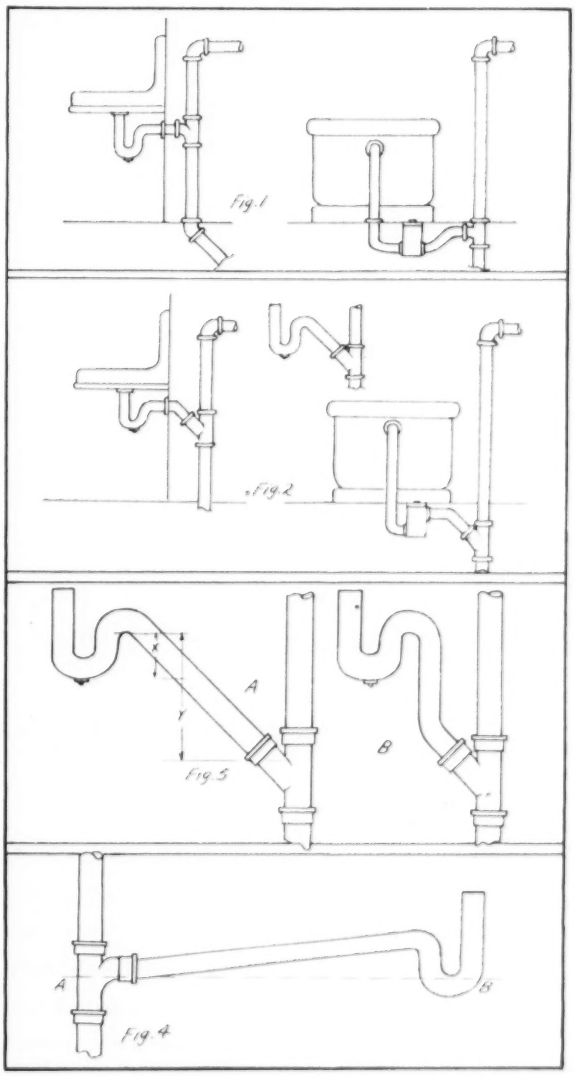



**Fig. 1—Correct method of continuous venting for P trap and drum traps. Fig. 2—Wrong method of connecting P and drum traps in continuous venting. Fig. 3—Very bad trap connections. Fig. 4—Illustrating a requirement found in many plumbing codes**

We have many times seen the connection A where it has been looked upon as complying with continuous vent requirements, and in certain cities the connection at B, while not perhaps looked upon as a continuous vent connection, would be considered as providing a vent for the trap.

While some who are ignorant of the underlying principle, actually feel that A shows a vented trap, as a matter of fact, this connection is a fine set-up for a siphon. A siphon is a device by means of which water may be carried from its level, to a lower level, over an intervening high point. The siphon cannot operate unless there is quite a difference in length between the short arm and the long arm. In A, Fig. 3, X is the short arm and Y the long arm, and as the outlet or long arm is considerably longer than the short arm which dips down into the water to be moved, the action of the trap as a siphon might become very strong, sufficiently strong, in fact, to empty the trap enough to break the seal. The same line of argument applies also to B.

Referring to Fig. 4, in which the pitch of the trap outlet is not so sharp, still because of its length, there is often quite a difference between the level of the trap seal and the low point on the outlet.

The foregoing considerations constitute the reason for finding in a large part of the best plumbing codes of the country, regulations to overcome such conditions. Probably the most commonly employed regulation is along the following line,—"No trap shall be placed more than 5 ft., horizontal developed length, from its vent. The distance shall be measured along the central line of the waste or soil pipe from the vertical inlet of the trap to the vent opening. The vent opening from the soil or waste pipe, except for water closets and similar fixtures, shall not be below the dip of the trap." The last sentence is the important one.

Some plumbing codes make the following provision,—"The trap shall be placed so that the lowest point of the branch shall not be any lower than the bottom of said trap."

There is much carelessness in the matter of giving traps that have continuous vents, too sharp a pitch, but probably there is even more erroneous practice in circuit venting, due to giving horizontal main lines too sharp a pitch.

Circuit venting is applied chiefly to fixtures which have floor outlets, such as water closets, pedestal urinals, stall urinals, slop sinks, and shower stalls.

There would seem to be no good reason why this same principle of venting should not be applied to elevated fixtures, such as lavatories and sinks. Some few plumbing codes specify that this type of venting may also be applied to such elevated fixtures, but the practice is not universal by any means.

In Figs. 5 and 6 we show circuit and loop venting applied to such lines, and from the two illustrations we want to point to certain practices which should be avoided if successful results are to be obtained.

In this type of venting, it is clear that the main horizontal line of waste has not only to carry the waste from the fixtures it serves, but also the air which vents the traps of these same fixtures. Certain it is, that if the pipe is completely filled with waste, or nearly so, it cannot also perform its duty as a vent line. This means that the pipe has to be sufficiently large in size to carry a peak load of waste and at the same time have enough room left in which air can travel. However, the pipe can be large enough for the purpose and still fail of correct results if the pitch of the pipe is too great.

In such work, best results come when there is least commotion of the waste. This is attained with a slight pitch. Moreover, with a sharp pitch, the waste is likely to rush to a low point, completely fill the pipe and thus entirely overcome its usefulness for venting purposes.

No doubt what we have written will serve to show some of the difficulties attending the use of circuit and loop venting for elevated fixtures. The principal point is that a comparatively large horizontal line will often be difficult and generally objectionable. This probably more than anything else, makes this particular use of circuit and loop venting unpopular.

Another way in which the matter of pitch enters into the subject of venting is found in what is known as flat venting.

A vent pipe when properly installed, will pitch upward from the fixture connection to the main vent or branch vent connection, at as sharp a grade as it is possible to obtain. If this is not done, the vent will not drain properly; condensation, rust and scale will collect in it and eventually its effective size will become reduced. This difficulty is often met with in water closet vents, where they run under floors. In Fig. 7, for instance, we show such a vent.

This point is important, but our experience has been that very few plumbing contractors or plumbing inspectors give the matter any attention, or appear to realize that to run an underfloor vent flat, is poor practice.

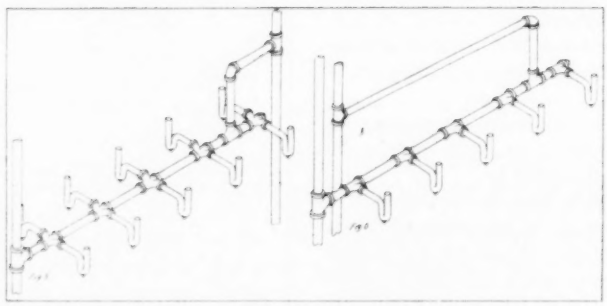


**Fig. 5—Circuit vent for double line of lavatories. Fig. 6—Loop vent for line of lavatories**

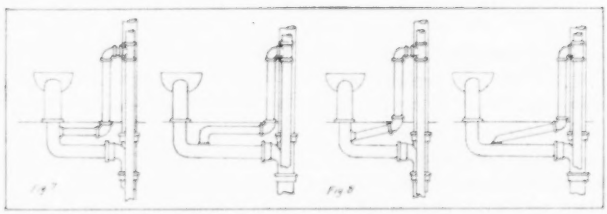
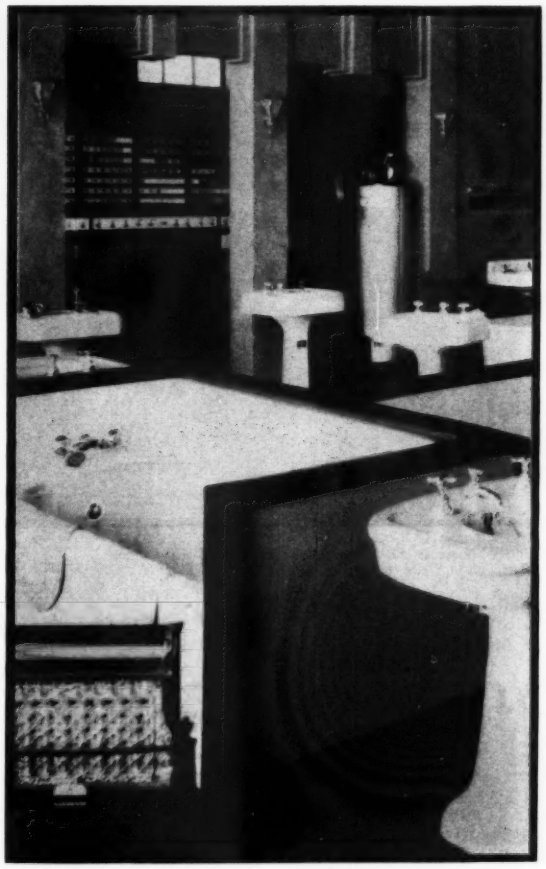
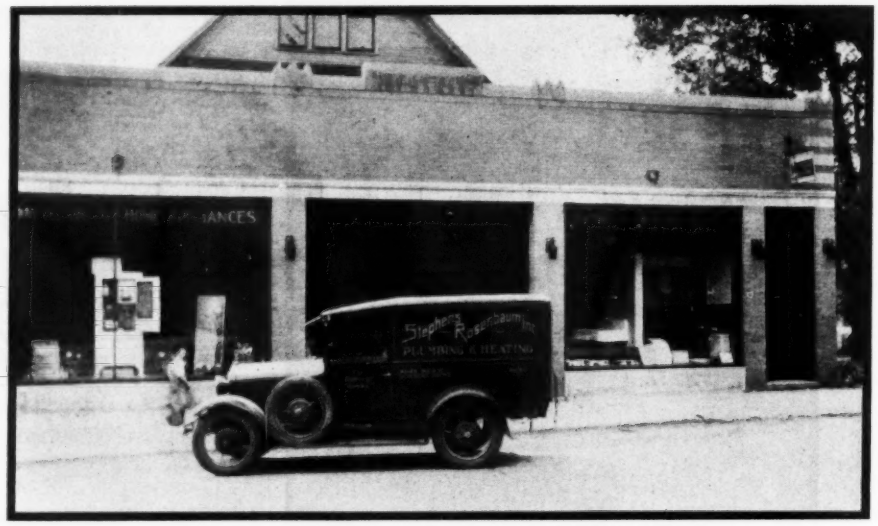


**Fig. 7—Flat under-floor vents on water closets. Fig. 8—Under-floor vents graded to provide proper drainage**



# PLUMBING & HEATING MERCHANDISING

IN this section are two merchandising studies: "Personal Contacts Preferred", and "Leading the Public to Buy," The first title explains itself—personal contact is the method used to sell plumbing and heating and allied specialties. In the second title, that word "Leading" has a double meaning. Here is a contractor making skilful use of "leaders" in his advertising to meet direct-to-you competition and to get people into his store. Both articles are practical and full of selling ideas.




**A view of the store that is the base for personal contacts**

# Personal Contact Preferred

IN LOCALITIES where the water is hard, the water softener is a profitable, comparatively easy selling item for the aggressive plumber, in the opinion of H. W. Rosenbaum, of Stephens & Rosenbaum, plumbers, 4928 Main Street, Downers Grove, Ill. Through an aggressive and intelligent sales policy, they have, during the past half-decade, built an enviable record in merchandising water softeners, as well as heating, plumbing, oil burners and kindred lines. In good times, their annual gross business will reach between $150,000 and $200,000.

"Our principal mode of merchandising is through personal contact," said Mr. Rosenbaum. "With respect to the water softener, we have two main selling approaches, either of which will give the experienced salesman the basis for a campaign that will prove successful nine times out of ten. Of these two arguments, freedom from lime accumulations in the coils and pipes of the heating unit, when the softener is used, is perhaps the most efficacious. A convincing story, emphasizing the need for the softener, can easily be built around the lessened efficiency of heating pipes in which a thick scale, impervious to the heat, has formed. Under the direction of the skillful salesman, this story is readily translated into a buying order. If demonstration is seen to be necessary to produce absolute conviction of the presence of such scale, reference to the hard substance to be found in every tea kettle will suffice.

**H. W. Rosenbaum**

### SELLING WHAT'S NEEDED

"The second natural ally to the water softener salesman is the practical impossibility of getting soap to lather in water that is high in lime and magnesium content, as is practically all deep well water in its natural state. Soap dissolved in hard water produces little more than an ugly scum on the water's surface, with consequent unsatisfactory results when bathing or laundry work is attempted. Such facts as these are marshalled in all of our selling efforts in such a way that when presented they break down every vestige of resistance. It has been my experience that the reality of these facts becomes most forceful when presented through personal contact.

"But to really sell water softeners or any other item, one must eat, breathe, and live them," Mr. Rosenbaum stated with enthusiasm. "Personal enthusiasm, engendered by a thorough knowledge of the merchandise, is the greatest producer of orders that ever existed. Compared with it, the printed word presents a sorry spectacle. It is cold, lifeless, although, of course, it has its uses.

"As with all of ours goods, we market what we believe is the best softener that we can find. Consequently, we are not only compelled to create a demand by calling attention to the need for the water softener, but we must also compete against the cheaper articles, which, from the customer's vantage point, appear to do the same work. To sell at all, a thorough knowledge of the points of superiority of our product is a primary requisite. A point here will illustrate: In all water softeners, the salt action against the sides of the machine is exceedingly corrosive. Therefore, if the plates of which the machine is constructed are not thick and strong, the life of the machine is materially lessened.

"Similar points of difference between the machine we handle and the cheaper article exist. It is our business to know them all, have them at

our finger-tips, for instant use when the progress of the sale has reached the stage of price comparisons. Of course, we don't deliberately call attention to other machines, but the prospective customer is sure to do so, and if you are not prepared to answer all manner of questions satisfactorily, you just don't sell.

"How do we find prospects? One of the best ways is through our journeymen. Another is the dropping of suggestions whenever opportunity offers. We train all of our men to be constantly on the alert when entering the basement or other parts of the home, for sales possibilities. Through this method we get our most valuable sales statistics and they cost us nothing more than a little intelligent instruction of our men in the rudiments of observation.

"We know that when we get a call for the inspection of a heating system which fails to heat properly, the chances are that it is a deliming job. The man sent out on the job is primed, and knows his stuff. There is no better time for him to call attention to the need for a water softener than when he has the boiler coils out on the floor, where the fact that they are corroded with lime and scale can be fully noted by the home owner. The best possible kind of selling takes place when the journeyman suggests: 'What you need in here, Mr. or Mrs. Blank, is one of these water softeners. It takes all of that lime out of the water before it goes into the heating pipes.' When the bill is rendered the home owner for the cleaning job, the envelope also contains a circular on water softeners. Within a reasonable length of time a personal call is made. If the home owner drops into the store for some little item, we are always on the alert to call his attention to the water softener, in this instance. In these ways we keep constantly after them.

"I find that high-pressure selling methods can not be used. They create more enmity and produce more antagonism than they advance our cause in selling. The slow, definite policy of a word dropped here, a suggestion there, will produce the desired result where the need really exists. It is folly to attempt to sell on any other basis.

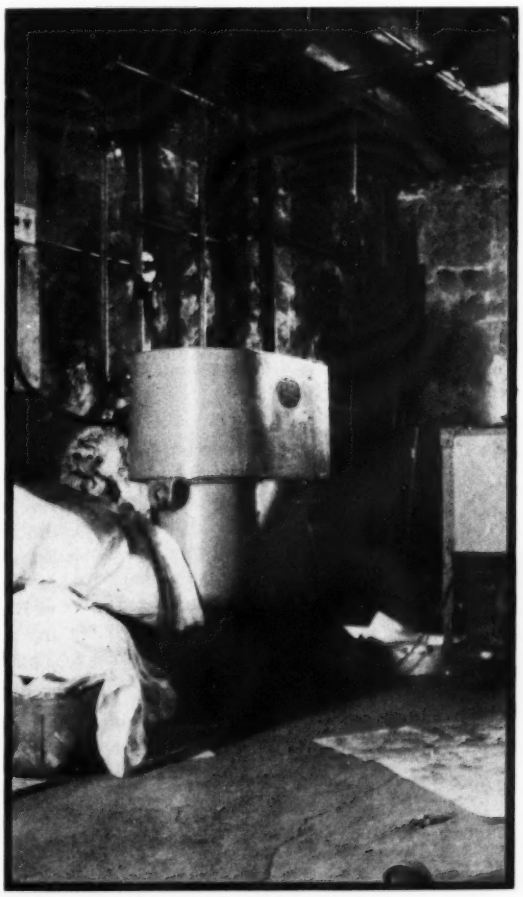
"Be particular to have a conspicuous display on your floor for visitors. It is surprising the number of sales that can be closed in this manner. You never can tell just how near to signing the buying order the home owner is when he comes in, but the fact that he is there of his own accord should tell the alert salesman much. So, too, your journeyman's suggestions often bear fruit quicker than you expect. So that you have got to be on the alert at all times, ready to take advantage of the opportunity, but you dare not be too aggressive in the matter. You are the aggressor, in that through your suggestions you have pointed out the need for the item, and the desirability of your particular machine over competitive machines. But from then on, your intelligent salesman does not bring too much pressure to bear. He makes it appear that the customer is using his own judgment in the matter.

**A. J. Stephens**

"We are particularly favored in this respect, because the need for the water softener is very great here. It is very apparent to most home owners. Our water here is 34 grains hard, and it is a constant source of trouble to the home owner whose water supply system is not equipped with a means of removing the lime and magnesium."

Is newspaper advertising effective in creating a demand for the water softener? Mr. Rosenbaum was asked. "Our newspaper advertising, with respect to the water softener, has not proved satisfactory," said he. "The returns, likewise, from our direct mail endeavors did not warrant the expense. From some 800 letters mailed to a carefully compiled list of home owners, we received only two inquiries. That makes the cost entirely too great. Our attitude toward the house-to-house canvass is that it belittles our business. Most people regard that type of salesman as little more than a pest. It tends toward antagonism. Furthermore, it is extremely difficult to train salesmen for this type of work, notwithstanding the brush and vacuum cleaner successes in this respect. The 'cold turkey' canvasser gets nowhere.

"There is little result in mailing two or three letters, announcing the appearance of our salesman on a certain day, and then have the said salesman bungle the job at the door, or have the housewife make it her business to be out on that day. Our way of doing it is not only the least expensive, but produces the greatest results. It's a personal contact proposition with us, pure and simple, but of the type where we persistently,



**This water softener is in the basement of the Stephens and Rosenbaum building, to be used as a demonstrator**

but unobtrusively, call attention to the need, and the customer sells himself.

"As I said before, the marketing of water softeners requires a great deal of hard study. Every prospect is a proposition unto himself. You've got to be so conversant with your subject that you can meet every possible condition; every question asked must be satisfactorily answered; every objection offered must be offset with a greater countering advantage in ownership of the article. You can't do that, in my opinion, with the printed word alone, nor can you do it with an inferior product. Even though you should be successful for a time with an inferior product, you would soon ruin your business reputation. We can not afford to do that.

"Perhaps one of the biggest reasons for our success in selling water softeners, oil burners, refrigerators, and plumbing of all kinds is that we have built a reputation in this community for carrying nothing but the best possible obtainable products. We do not take on an item of any kind without investigating thoroughly first the item itself, and secondly, the company back of it. On the larger items, we take the trouble of visiting the factory, finding out how the article is made, the grades of materials going into its construction, and, most important of all, the business policy and standing of the company itself. No salesman ever talks us into stocking an item without our thorough investigation of that item first. We take for sale nothing that we can not personally guarantee. We also have built up a reputation for fairness in all of our dealings.

"It's easy enough to sell if you want to cut prices. But we don't cut prices. If we can't get the business at a figure which assures us a reasonable profit, we pass it up. To sell today, you've got to keep moving all the time—constantly contacting people, calling their attention to the need for a water softener, the oil burner, the automatic refrigerator, or what not. The individual home offers a big opportunity for the plumber if he will but consent to use intelligence in his sales effort. He must work to make friends, not to antagonize. Do the things that will build confidence in your wares.

HAVE WE PLEASED YOU?

THANK YOU!

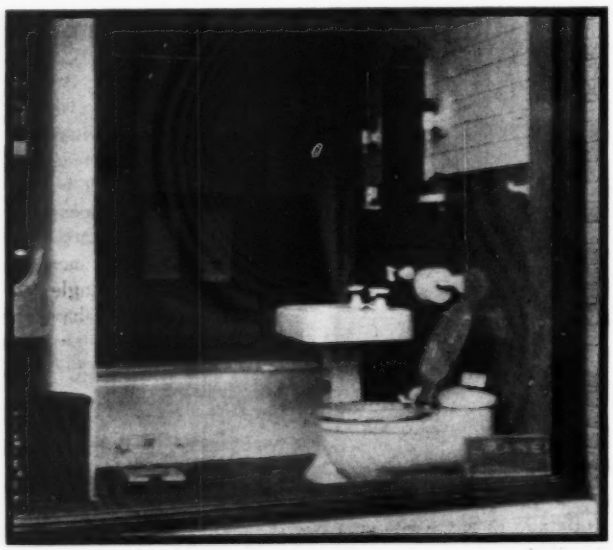
We want our men to do your work in a way that will satisfy YOU. We expect them to be courteous at all times, and to do your work in such a manner as to cause you a minimum amount of inconvenience. If our service to you fails to reach this high standard let us know.

Stephens - Rosenbaum Co.

PLUMBING & HEATING

*"The Different Service"*

Phone 783 DOWNERS GROVE, ILL. 4928 Main Street



**Looking into the window of the store. Above: Letting the customer know his business is appreciated**

### MEETING PRICE COMPETITION

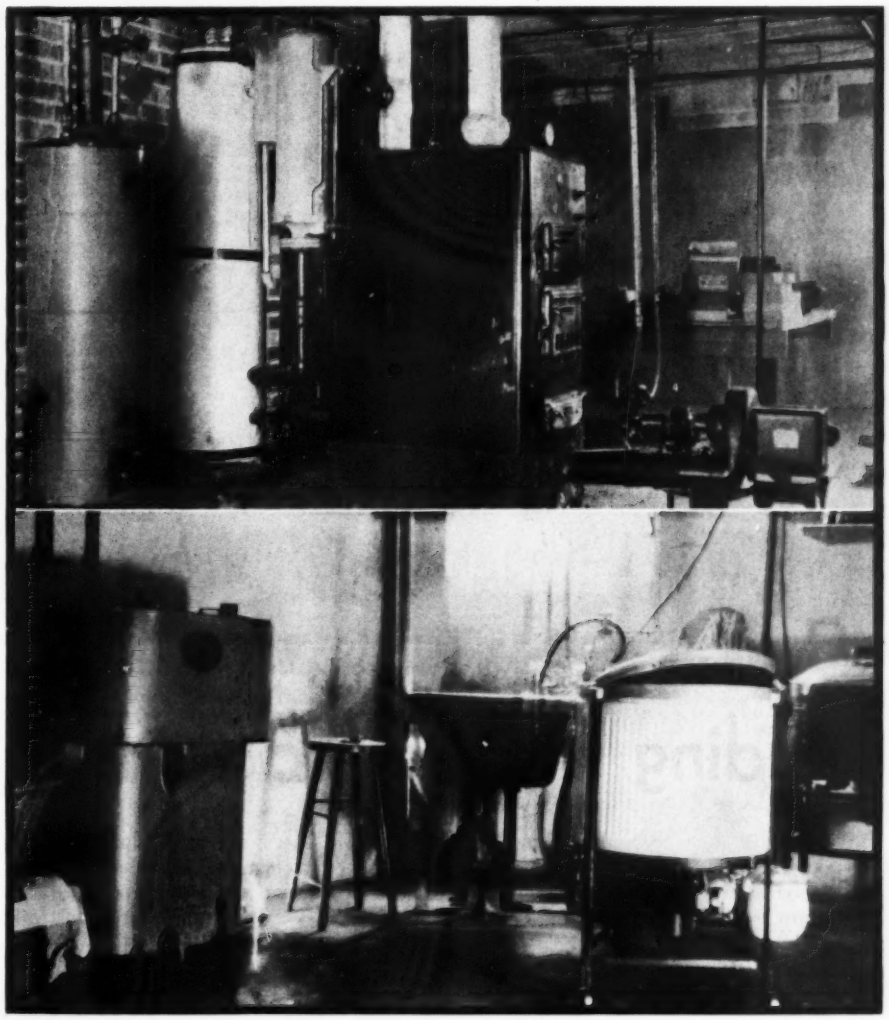
"Many men fear price competition. Of course, price competition is present. It always has been and always will be. But it's simple, if time is taken to study ways of combatting it. This applies to the water softener as well as anything else. Let me illustrate:

"We sell flush valve balls, for instance, at four different prices—50 cents, 75 cents, $1.00 and $1.25. The first we don't guarantee. The others we guarantee for one, two, and three years, respectively. From the customer's standpoint, which is the better purchase, the 50 cent item, that he might have to replace every six months or so at his own expense, or the $1.25 item, which we stand ready to replace without cost to him, for a period of three years? It's all in the way you present the proposition to the prospect. That's why I lay so much stress upon the necessity of knowing your merchandise, knowing its competitors in all price classes so well that you can assist the purchaser in making an intelligent selection. That's all there is to selling."

Mr. Stephens is a practical plumber with 35 years of journeyman experience. Mr. Rosenbaum is not only a sanitary engineer, but is also a graduate of Northwestern University in business administration. He has also had many years of practical experience in the buying departments of large organizations.

The business methods employed throughout by this company are thor-

ough and systematic. The external appearance of their store is attractive and inviting. Their windows and display floor arrangements are such at all times as to cause favorable comment and to invite inspection. Stocks of merchandise and supplies are kept in easily accessible, plainly marked, and orderly cabinets and bins, both in the workshop and the store. "In order to give the lie to the jokesters about plumbers wasting time in returning to the store for tools, we spent $1,300 in purchasing and equipping a light runabout truck," said Mr. Rosenbaum, "which contains a complete set of tools and two kits of small fittings. We also take particular pains to advertise this fact. That is an illustration of what we are constantly doing to combat antagonism of any and every kind. We find that it pays in greater confidence in our business."



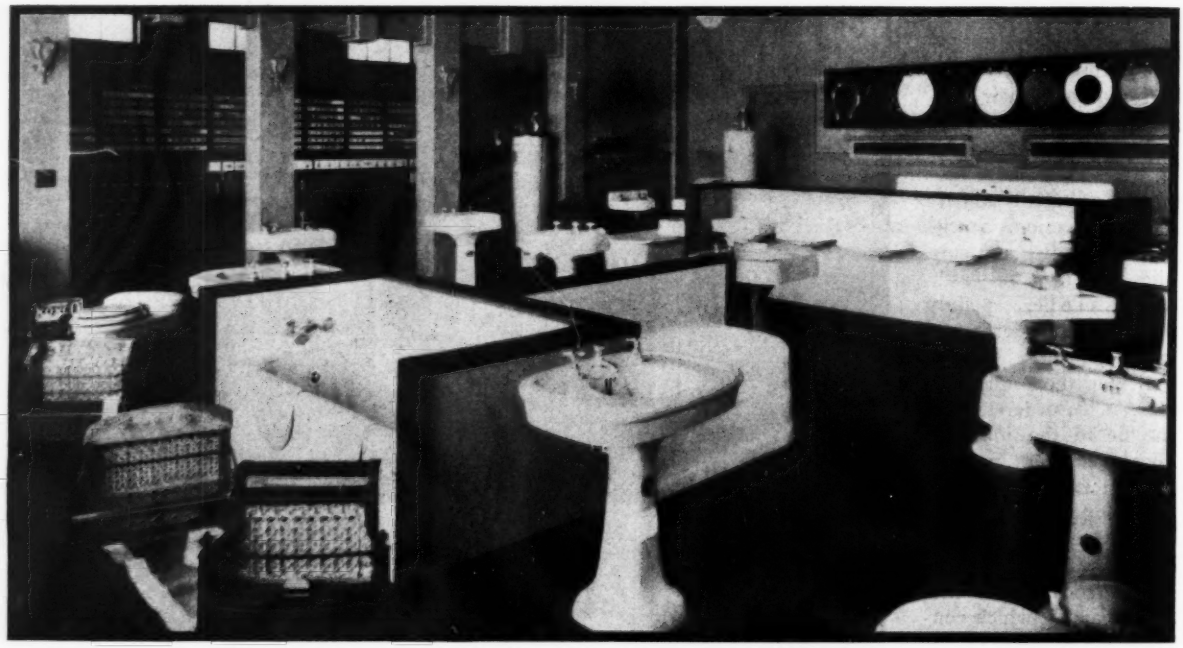
**The equipment shown in the top view was installed by Stephens & Rosenbaum in the gate lodge of the Coonley School in their city. Below is the water softener and the remainder of the equipment**

### THEY FINANCE THEIR OWN SALES

Mr. Rosenbaum revealed another fact which is somewhat unusual in these days of installment selling. "We do all our own financing," said he. "We feel that if we can't finance the purchases of customers who seek an extension of time for payment, neither can we afford to turn that part of our business over to a finance company. In the final analysis, turning accounts over to a finance company does not relieve us from the responsibility. For, if the customer defaults on his payments, we are called upon by the finance company to make good. Therefore, to employ the services of a finance company is, we think, one of the easiest ways of kidding ourselves into an over-extended credit position without realizing it.

"Our terms are one-third down, one-third in thirty days, and the final third in sixty days. Such an arrangement is considered the same as cash and is carried on open account. Where a longer time is desired for payment, we have a short contract form, which definitely states when payment is to be made, the amount of each payment, and the procedure to be executed in case of default. We also feel that since we assume all of the risk in such transactions, there is no reason why we should not be the recipients of the extra one per cent, which would be charged by the finance companies.

"Any bills not paid after sixty days are considered old accounts and these I go after myself through a personal visit. We do not use the collection letter in any form. It is a waste of time and an additional expense. First, I telephone the delinquent, calling his attention to the unpaid bill. Many times I find that the bill has been merely overlooked. If the information forthcoming concerning it in such cases is to the effect that a check will be mailed at once, I ask if I might not call for it that day, and, if agreeable, I waste no time in getting over there right away. Or, if the check is not forthcoming in a day or so, I make a personal visit. Many times I find the head of the house is out of work. If so, I tell him not to worry about the matter until he gets back on his feet; that he will not be bothered about the bill again; that my visit was merely to learn the reason why it had not been paid. Then I usually get a promise that the bill will be paid at the earliest possible convenience. In that way I make a friend. After all, you might as well take that attitude.



**Into this fine display "leaders" in ads lead the public**

# Leading the Public to Buy

THE Will Rees Plumbing Co., Salt Lake City, Utah, celebrated its forty-first birthday last year by moving into its new $20,000 store at 250 East Broadway. The new building, built during 1931 and owned by the company, furnishes one of the best equipped establishments for the merchandising of plumbing and heating merchandise and accessories in the western country. In addition to the above investment, the company maintains a stock of goods, merchandise, equipment and other assets of the value of approximately $20,000.

The outstanding factor for the merchandising of the plumbing goods is the 25 by 35 foot display room in the front of the store, which contains a display of all kinds of the most up-to-date fixtures, including colorware. The display is visible for the heavy automobile, street car and bus traffic which traverses East Broadway, and parking space can always be found in front of the store by the autoist. One 24-foot plate glass window fronts the entire store, with the exception of the ten-foot entrance at the east end, as seen in the picture on page 45.

"We believe that this display room has an exceptional drawing power for the merchandising of plumbing goods," said Mr. Rees, president and manager of the company. "In the first place, it is clean and attractive and especially inviting to women who wish to inspect plumbing fixtures. To try and sell women plumbing merchandise by displaying out-of-date merchandise, or just an odd fixture or two, is not only a handicap, but will drive prospective customers to better equipped and managed establishments."

All fixtures have price tags.

"We not only favor price tags, but believe that the figures should be plain enough so that the person looking in through the front window can see the figures on those fixtures within several feet of the window.

"We are trying to do away with the high price bogey. People frequently think that because the goods are displayed in a large, well equipped store that they will cost about twice as much as if purchased from someone in a side alley, or with a back-yard shop. We hope to be able to make our price low enough to bring them in."

A full stock of small accessories is carried. When the customer enters

**Announcement of new location—and a "leader"**

he traverses a thirty-foot hallway to the office counter. On the west side, the hallway is arched, giving a complete view and entrance to the display room, while on the east side is a large number of white boxes, arranged in rows, containing the accessories. On the front of each box is a sample of the accessory, so that the customer can generally point directly to the article that he desires.

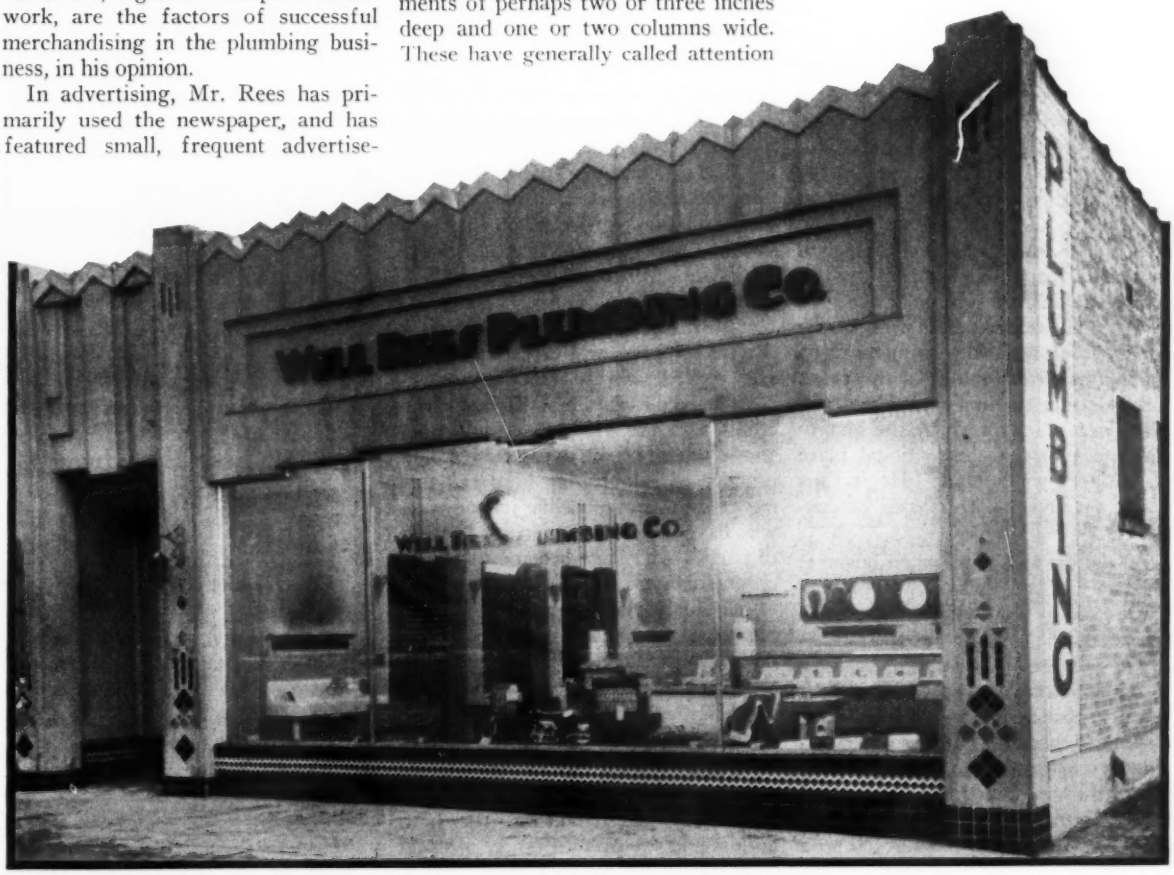
"A complete stock of accessories aids merchandising in several ways," said Mr. Rees. "There is generally a good margin of profit in their sale, considering the size of the article. The average person is in the market much more frequently for a small accessory than he is for a set of fixtures, etc. By securing his accessory trade, he is generally a customer when he comes into the market for new fixtures or repair work."

The new building is a result of Mr. Rees' faith in the future of the merchandising plumber. An attractive, centrally located downtown store, an adequate, up-to-date stock, well displayed; courteous, efficient service to customers, together with promotional work, are the factors of successful merchandising in the plumbing business, in his opinion.

In advertising, Mr. Rees has primarily used the newspaper, and has featured small, frequent advertisements of perhaps two or three inches deep and one or two columns wide. These have generally called attention to some article that he was using as a "leader," to his repair service, to the number of years that the company has been in the business, or some other "talking point" that might draw customers. Small, frequent advertisements have greater effect than occasional large ones, in his opinion.

**Four "leaders" that attracted buying attention**

While Mr. Rees does not have any figures as to the efficiency of *"leaders,"* he states that they result in inquiries and frequent sales. He considers that they are an excellent way of meeting the mail order house competition for this reason: there is a certain class of people who invariably go to the store where they can secure the cheapest product. Unless the plumber offers them as attractive a price as the mail order house, they will not come into the plumbing store, and if they don't come into the store, he obviously has no chance to sell them. By getting them to come in through the use of a "leader," it creates the opportunity to try to sell them quality goods. If they will accept nothing except the "cheapest," the leader can be sold.




**Looking into the Rees display room from the sidewalk gives a wide sweep of values in fixtures**

**Another new location ad with a "special" to help things along**

Mr. Rees feels that it is necessary to cater to all classes of people. He tries to appeal to those desiring the cheapest through the use of leaders and by carrying a cheap grade of merchandise for those customers. On the other hand, he tries to secure the sale of quality merchandise by trying to sell it to those who come into the store for a leader, and by having an attractive place of business and a complete display of colorware to bring in those customers who desire quality first and who do not argue about a small difference in the price. He feels that the money invested will bring in a good return by the quality customers that his exceptional place of business will attract. He is thus trying to attract both classes of customers.

At the present time, when business is below normal, he is not employing a salesman to follow up journeymen's reports on the condition of the plumbing in a house where they have done work, but handles most of it himself. The fact that he makes it a practice of inspecting work a few days after it is done, gives him an opening to point out to the customer the advantage of new fixtures or other desirable changes. In addition, manufacturer's and jobber's literature is sent. If the customer is at all a possible prospect for additional work, he makes a personal call. He is considering hiring a salesman in the near future, and plans to pay him on a commission basis. His general requirements for a salesman are that he be neat appearing, intelligent and have some experience in a selling line.

However, the future of the plumbing business as a merchandising industry, does not depend alone upon the master plumber, according to Mr. Rees.

"The jobber and the manufacturer must co-operate with the plumber if the latter is going to develop into a successful merchandiser," he said. "Their price to the plumber must be such that he can compete with the 'direct to you' houses. I am not in favor of the supply houses establishing a resale price. The plumber, being the retailer, should set the retail price. In addition, when supply houses set such mark-ups as ten per cent, the plumber hasn't a chance to make a profit. Why should the wholesaler have a retail price if he can't sell at retail?

"I believe that it would aid the fight against the 'direct to you' concern if the plumber carried both a quality article and a cheap one. When the customer is in the market entirely for price, and nothing else, he can be sold the cheap article, with the understanding that it is not guaranteed. In addition, the plumber can stress the value of installation service in pushing the sale of quality goods; that he stands behind his work, will inspect the job after it is finished, and repair any defects in workmanship or materials that may occur, while the 'direct-to-you' concern will do none of these.

"The wholesalers must tighten their credit. Their slogan should be, 'credit where credit is justified.' The practice of establishing 'outlets,' giving credit to irresponsible journeymen who have taken out a master's license, to parties who have become insolvent on one or more occasions, serves only to eliminate the established, solvent plumbers who endeavor to merchandise from an attractive downtown establishment. If the wholesalers would do this, there would be no need for set resale prices, or regular dealers like in the automobile business."

In addition to the advantages mentioned for merchandising, the new building has a private office, a stock room, a 28 by 36 foot shop, and a large basement, equipped with a stoker. In the rear of the building is a 36 by 40 foot pipe yard.

Besides the usual working features, the shop has hot and cold running water, lockers, toilet and lavatory facilities and other conveniences for the journeymen, who, under such conditions, are able to keep clean.

"While we instruct our men to point out defects in the plumbing and make slight suggestions as to replacements, we do not feel that it is the function of the journeyman to act as a salesman to any extent while on the job," says Mr. Rees. "People may not object to talking to a salesman who is working on a commission and there is no charge if nothing is sold, but they do object to a lengthy talk with a journeyman when they are being charged at the rate of $1.50 or $1.75 per hour for such selling efforts. However, the journeyman can very effectively increase sales by turning in a list of such fixtures and equipment as should be replaced. A salesman can then call on the customer and they can be sent appropriate literature."

Following a ten-year training in the mechanics of the industry, Mr. Rees and two partners opened a plumbing, tinning and cornice shop. A short time afterward the Will Rees Plumbing Co. was established, in 1890.

Will Rees
Plumbing Co.
Established 1890
NOW IN
NEW
LOCATION
250 East Broadway
THIS WEEK'S
SPECIALS
---- ---- Radiant Gas Heater . . . . . $14
One-Piece Sink, Drainboard and Back . . . . . $19
TOILET . . . . . $18
30-Gallon Range Boiler . . $10 25

**"Leaders" made this announcement of the new location valuable to readers**

# Our Industry

## Prices Are Down

UNION MEN in the building trades are showing a willingness to be moved by facts rather than precedent. The country has heard a great deal about the railroad unions which finally accepted a voluntary cut in pay to meet the emergency needs of the railroads. The effect of that union decision has spread into other organized groups.

The building trades have now in many cities voluntarily taken a cut in wages of 20 per cent in some cases, 25 per cent in others. A proposal came to employers in some cities for a cut of one size for new work and a deeper slash for remodeling jobs. The likelihood of misunderstanding which would come up if two scales were in effect, led some of these employers to prefer and insist upon a uniform reduction.

Buyers have been taught in the past year or two to look for reductions, either in actual dollars or in greater service for the same expenditure. Union scales have stood out prominently at a high cost level which most people knew was fictitious. They found they could get the work done by men who were more anxious to get work than they were to observe a high scale which frequently meant idleness.

When the effect of this lowered wage is added to the drop in prices of fixtures and fittings, the building industry finds itself stripped for action against other fields which have previously driven their prices down. As the article on a previous page shows, the net effect of wage cuts will take $300,000,000 off of the $3,000,000,000 total spent in the construction field last year. Changes in material prices are harder to estimate, when comparing 1931 with 1932, but the government figures on an average six-fixture job show a 10 to 12 per cent drop in wholesale plumbing prices. If the same ratio holds good for other building supplies, another $150,000,000 would come off of last year's total or a combined saving of $450,000,000 for the buyers who will build this year.

Employing plumbers and heating and piping contractors have been alert in using this new condition. Two letters reproduced in this issue, and of course, many hundreds more were written, have gone promptly to customers telling them of the savings now made possible by lower prices and labor's voluntary cut. The response has been encouraging. Inquiries and orders have come to these contractors with the result that idle time for labor is being turned into actual working hours. It is a subject that your customers will like to hear about.

## One Utility President Who Is Building Sales

WHEN those of us in the plumbing and heating industry read in DOMESTIC ENGINEERING a few months ago that the presidents of 126 gas companies had unanimously agreed to the new co-operative principles of the American Gas Association, the news carried an air of finality. Other industries invariably seem better organized and managed than one's own and assuredly gas company executives could be depended upon to act in agreement on any policy to which all subscribed.

But codes of practice are evidently individually interpreted and applied in even the efficient looking utility field.

When those 126 presidents and others as well returned to their offices, the new, broad set of gas merchandising principles needed all of their breadth to encompass the varied means employed in their application. Even though freed of the fear of what a competitor would do which has held back so many forward looking movements in our industry, these individuals did one of many things, they either forgot to apply the principles, or interpreted them so narrowly that the independent dealer was asked to surrender more of his independence, or they made a few gestures in the direction of real co-operation, or in a few cases, they took steps to try out the new order of things for which they had voted.

Without tarrying to criticize the many executives who have continued to regard the independent dealer as a rival whose activities must either be circumscribed or circumvented, it is refreshing to recall the experiences of Morse DellPlain, the energetic president of the Public Service Co. of Northern Indiana. His viewpoint on the merchandising of gas appliances was told in DOMESTIC ENGINEERING last issue (page 25) and reveals that he has found independent dealers are properly trade allies not trade rivals.

When the sales force of the independent group is added to the efforts of the utility to promote the advantages of gas as a fuel, the results are increased sales. Those utility men who still believe that the plumbing and heating dealer should either be opposed, ignored or grudgingly accepted can study Mr. DellPlain's experience to profitable advantage. Those plumbing and heating dealers who have accepted co-operative offers under which they surrender their privilege of selecting their own equipment by agreeing to push an appliance which the utility purchases and promotes, can find in the same report that such a practice retards sales and drives away the sales help which the appliance manufacturer will and can give.

Unity of effort by all those concerned in making and installing appliances and in selling the gas which that equipment consumes is an assurance of profit to all.

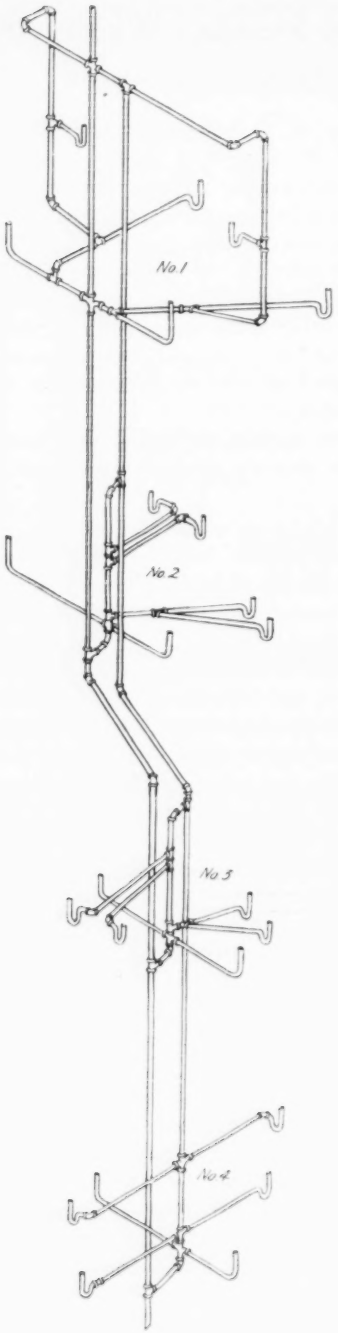



**Fig. 3—This is the drawing which was worked out to interpret the plumbing connections required for the fixture arrangements indicated on the opposite side of this page in Fig. 4. This drawing was not made to scale**

## New Practice in Plumbing

(Continued from Page 32)

ing one of the four layouts, but treating the matter as in Fig. 3 is to our mind a better method.

A comparison of Figs. 2 and 3 will show that in working out the latter, while we have followed the same fixture layouts, we have made different connections in several instances. For instance on the third floor layout, the work would probably more often be installed as shown than as shown in Fig. 3.

The double lavatory connections of Fig. 3 are rather unusual. The unit vent method of Fig. 2 is the more common method.

In Fig. 3 are several instances of the use of wet vents, and under modern plumbing practice such methods are, in our opinion, legitimate as they are here applied.

In Fig. 2 also, wet vents are shown. As a matter of fact, the water closets in each of the four layouts are wet-vented. In this drawing also, we are free to say that the wet vents as installed represent safe practice.

If in any of the layouts shown in Fig. 2, both lavatories and both bath tubs were to be discharged at the same instant, the effectiveness of the venting of the two water closets would be lost.

We think that the use of wet vents should be figured out largely in the way that we have just indicated. For instance, if a kitchen sink and set of laundry tubs were adjacent to each other, their simultaneous use would probably be quite a common occurrence under many conditions of use, and for that reason we would not favor use of a wet vent in connection with these two fixtures.

To put the thing concisely, it is wrong to use a wet vent unless conditions of use are such that when any one of the fixtures is discharging, its vent remains dry.

For the information of those particularly interested in isometric drawing, we would point out that each layout in Fig. 2 is based on the floor plans shown in Fig. 4. Furthermore, the view in each instance is taken looking at the floor plan from the lower left hand corner.

The advantage of a regular isometric drawing (Fig. 2) over such a drawing as Fig. 3, is that the isometric is actually worked out to scale, and all locations and all lines, if accurately taken, are in true relationship, one to the other. Such a drawing may be used as a working drawing.

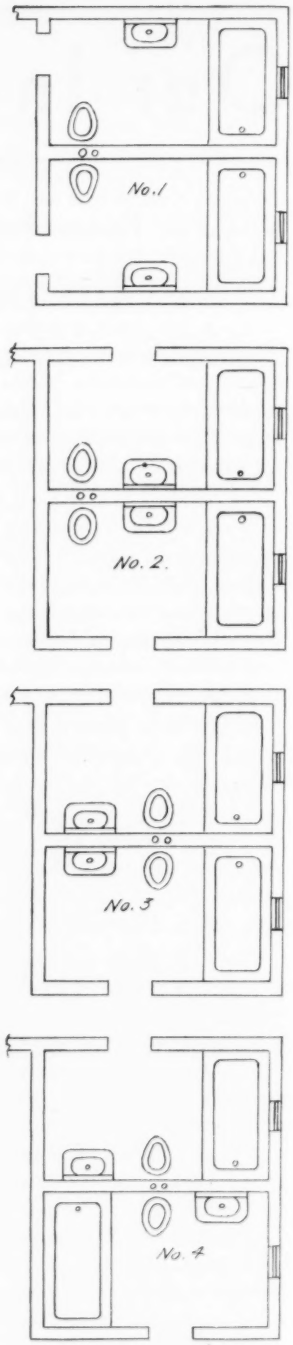



**Fig. 4 — The plan above shows the fixture arrangements on the several floors. Note that the bathrooms are back-to-back and that the drawings in Figs. 2 and 3 show the piping**

TRADE PENBERTHY PRODUCTS MARK

# A SYMBOL

## ITS MEANING TO THE PLUMBING CONTRACTOR

When a plumbing contractor installs an electric sump pump or hydraulic cellar drainer bearing the trade mark reproduced above, it means that—

—he will earn a fair profit

—his profit will not be dissipated in servicing

—installation is simple and can be quickly made

—reliability and operating economy have been proved

—the pump is immune to corrosion—of copper and bronze throughout

—a financially responsible manufacturer stands squarely behind him in assuring satisfaction to his customer

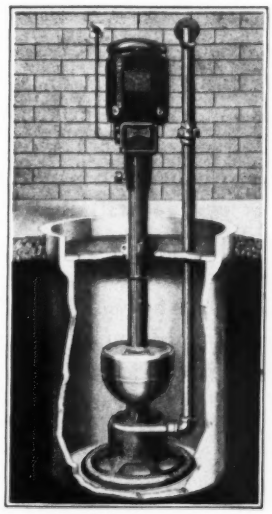
—the manufacturer has the experience, resources and research facilities to build to a purpose, not to a price

—the manufacturer is actively creating the demand by using large space in leading architectural and building publications.

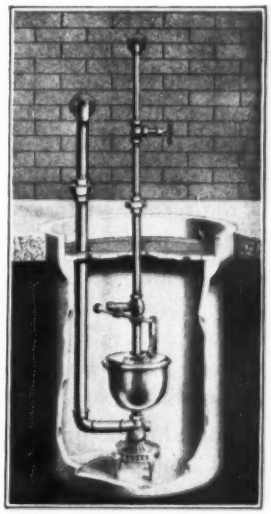
*Carried in stock by leading jobbers throughout the country*

PENBERTHY INJECTOR COMPANY

Established in 1886 DETROIT Canadian Plant Windsor, Ont.



*Penberthy Automatic Electric Sump Pump*

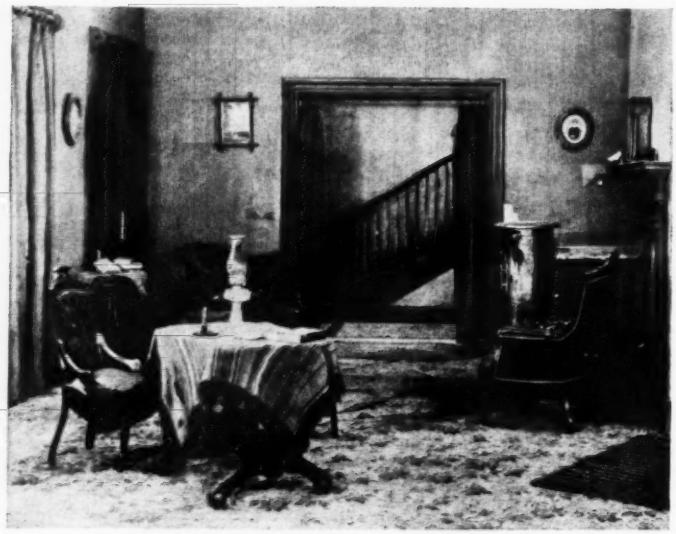


*Penberthy Automatic Cellar Drainer (Water Operated)*

COPPER AND BRONZE THROUGHOUT

# PENBERTHY PUMPS REMOVE SEEPAGE WATER

# This was modern...*once!*



*The oil lamp on the table... the horsehair furniture... the ornate picture frames... the cast iron stove, piped to the chimney flue... they were modern...* once.

Exposed radiators also were modern . . . once. They are now being replaced by concealed heating . . . by convectors.*

Don't run the risk of having your work classed as old-fashioned in a year or two. Install Rome Convectors.

Concealed heating with Rocop Convectors is no longer complicated... nor difficult to figure. Rocop Convectors are now readily selected from 21 convenient sizes. They are all easy to install.

Rome has designed Convectors and Complete Units (consisting of convectors and enclosures) to meet every modern construction need. Moreover, Rome has standardized them not only as to types and sizes, but also as to methods of installation.

* *The A. S. H. V. E. Guide defines CONVECTOR as "a heater which is enclosed in a duct or cabinet and which gives off heat to an air stream, which passes into a room which is to be heated." Rome Radiation Company, therefore, gives the name Convector to its concealed heating units . . . Rocop and Robras.*

**GREATER HEATING CAPACITY . . . LESS SPACE**

Besides being *modern*, remember that Rome Convectors are built up to a high standard and not down to a price. They can be counted on for life-long service. They have maximum effectiveness because of the use of copper with its high conductivity . . . the highest of any commercially available metal. This results also in compactness . . . an important item in all modern construction.

For unusual requirements, write us stating problem. Send a sketch with dimensions; if possible we will be glad to recommend the correct Robras Convector to solve your unusual problems.

ROCOP and ROBRAS Convectors are fully described and illustrated in two Rome Bulletins. Other data included: tables of capacities and weights, dimension diagrams, methods of installation, etc. Rome will be glad to mail you copies.

\+ \+

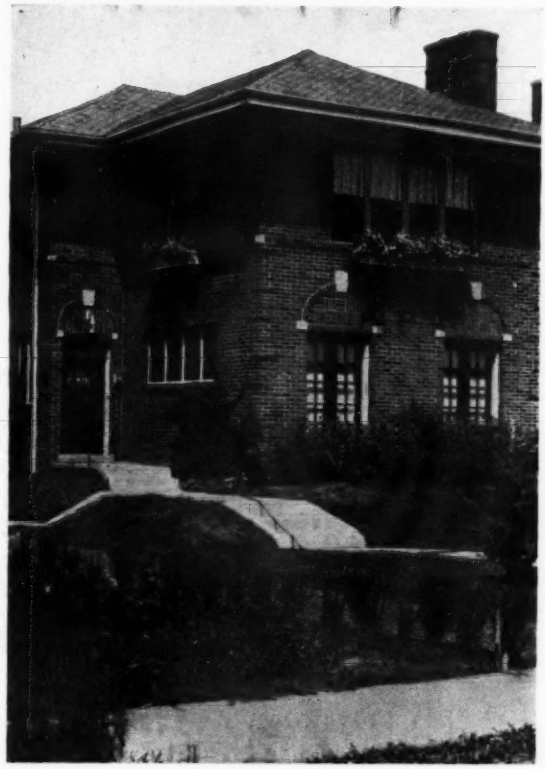
**WANTED** . . . Agents of good character and ability to represent Rome Convectors in territories still open. Inquiries invited.

# Rome Radiation Company

DIVISION OF

Revere Copper *and* Brass Incorporated

ROME, N. Y.



**A heating contractor installed a steam system in a residence and its operation proved its correctness. Mr. Alt checked it using the figures and methods described in the preceding installments of this series. This article which is the ninth shows the close agreement between actual and recommended practice**

BY H. L. ALT

# Heating in Residences and Small Buildings

IN THE previous chapter the general features and methods of sizing for one-pipe steam heating systems were outlined and the application to a typical installation will now be discussed. It must be remembered, however, that in applying the general principles to practical work there is always a certain amount of modification which must be made to suit the particular job under consideration and that, while the generalities are the ideal, the practical installation will only approach and very seldom reach this ideal. Numerous causes conspired to prevent perfection, such as an unexpected main girder, a room in which no heating pipes can be run, a soil line from fixtures above, an electrical panel that another contractor has installed when no one was watching him, etc. Nevertheless a plan or scheme should be kept in mind and all pipes and radiators should be arranged to conform to the idea as a whole, deviating from the basic conception only when absolutely necessary.

The building in question is a house where the owner furnishes heat and hot water to the tenant on the other floor and, therefore, a single boiler and hot water tank are all that are required for this installation. The radiation was not calculated by any of the rules previously quoted but was determined by using certain divisors of the cubic contents of the various rooms, these divisors being varied for one or two sides exposed and for north, west, south and east exposures.

Needless to say, this method, like all other rules-of-thumb, gives reasonably correct results when applied to average rooms and under ordinary conditions; it even takes into consideration whether one or two walls are exposed and the direction in which they face. It ignores the cold floors and ceilings but, in spite of this, it gave radiator sizes which resulted in holding even temperatures in the different rooms within two or three degrees notwithstanding the fact that, when the house was first constructed, it was entirely exposed on all sides for an indefinite distance. The divisors used are those given in the following:

| Exposure | One Wall Exposed |
|---|---|
| South | 70 |
| East | 60 |
| North | 50 |
| West | 60 |
| Bath | 40 |

| Exposure | Two Walls Exposed |
|---|---|
| South and East | 65 |
| East and North | 55 |
| North and West | 55 |
| West and South | 65 |
| Bath | 35 |

The radiation resulting from this method and the actual radiation installed will be found in the following schedule, R indicating that a riser to the floor above passed through the room and that the radiation was reduced accordingly to allow for the heat received from the riser:

| | Required Sq. Ft. | Installed Sq. Ft. |
|---|---|---|
| **First Floor** | | |
| Alcove | 10 | 12 |
| Living Room | 45 | 40 plus R |
| Dining Room | 28 | 28 |
| Vestibule | 12 | 12 |
| Kitchen | 32 | 28 plus R |
| Rear Stairs | 33 | 32 |
| Rear Bedroom | 23 | 24 plus R |
| Bath | 18 | 20 |
| Front Bedroom | 25 | 16 plus 2R |
| Front Hall | 25 | 24 |
| **Second Floor** | | |
| Living Room | 17 | 16 |
| Parlor | 45 | 40 plus R |
| Dining Room | 28 | 28 |
| Kitchen | 32 | 32 |
| Rear Bedroom | 22 | 24 |
| Bath | 18 | 20 |
| Front Bedroom | 25 | 20 plus R |
| **Attic** | | |
| Front Bedroom | 22 | 24 |
| Rear Bedroom | 18 | 20 |
| Total | 478 | 460 plus 7R |

It will be seen that in the rear first floor bedroom no allowance was taken off for the riser. To explain this apparent inconsistency it should be stated that this room was intended for the use of the owner's grandmother and the riser was thrown in, under instructions of the owner, so as to give a little extra heat in this one room as old persons always feel the cold more than those of middle age.

In Fig. 37 is given an isometric view of the heating system as installed which clearly indicates how the lines were run. Considerable thought was expended before deciding to make two loops of the main because it could have been done with one loop perhaps at somewhat less expense. It is well known to those who have had experience with one-pipe systems that the radiators nearest the boiler on the main will heat more quickly on cold mornings than those farther away. This is because the steam has a much shorter travel to reach these radiators and much less air has to be expelled in order to allow the steam to enter and to heat the nearer radiators. The owner felt that the first rooms to be heated

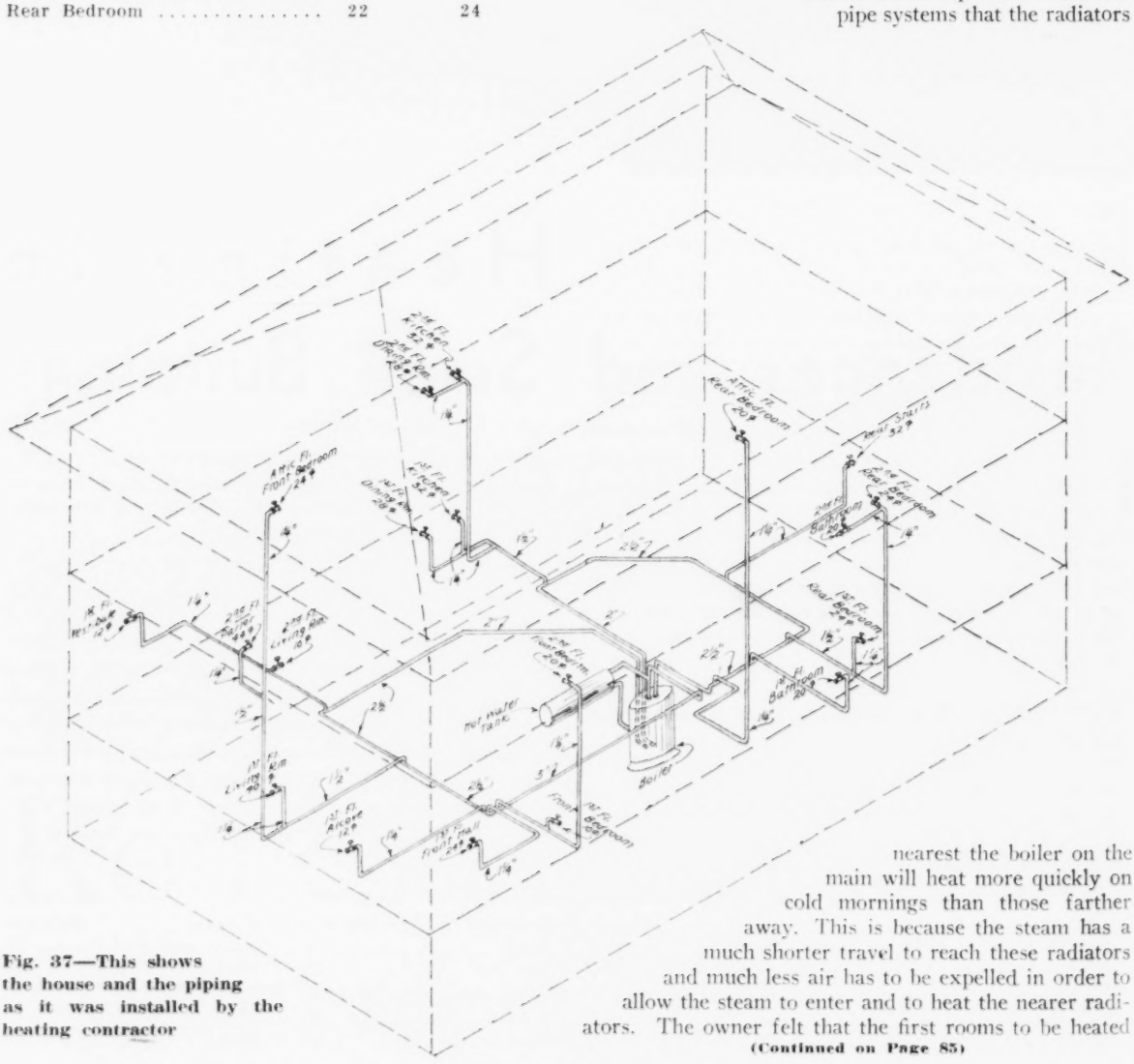



**Fig. 37—This shows the house and the piping as it was installed by the heating contractor**

(Continued on Page 85)

AN
EDITORIAL
SECTION

# AUTOMATIC HEAT

AUTOMATIC HEAT SECTION

# AUTOMATIC HEAT SECTION

## The Contents


### Stoker Sales Pay - - - - - - - 55

"Automatic heat", says this dealer who has made a success of stoker sales, "is something that every plumbing and heating man should be able to provide the public."

### Piping Changes Stop Noise - - - 58

Mr. Brown tells how the trouble in this gas-fired steam job using concealed radiators was analyzed and overcome.

### Sell the Job Right - - - - - - - 63

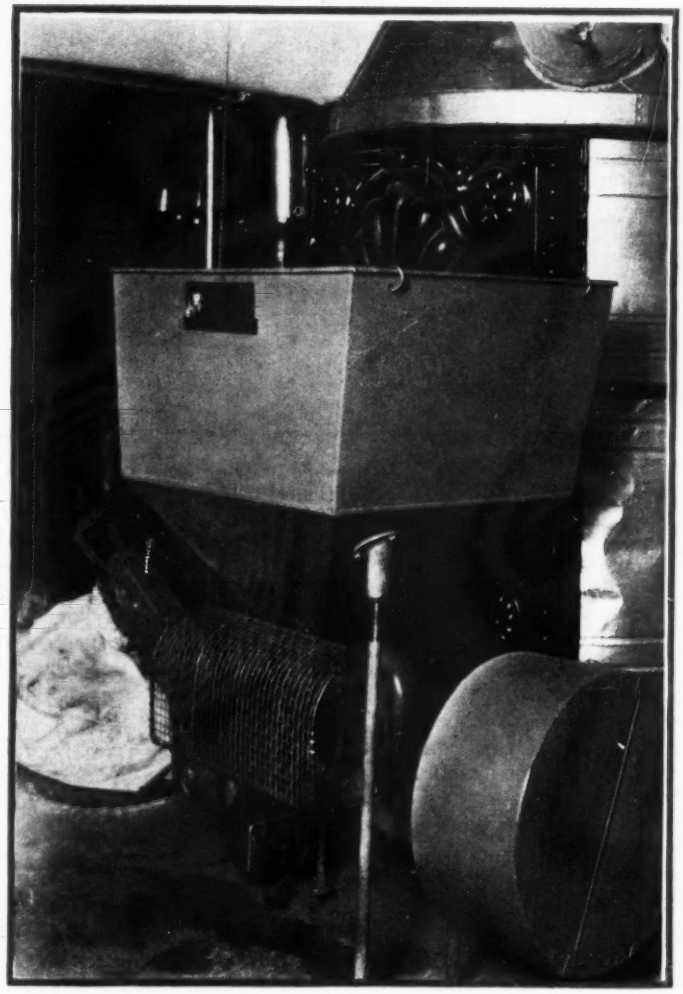
Here's a heating man who has built up an oil burner business to an average of 50 automatic heating installations each year.

### Gas Heating for Big Home Building Project - - - - - 68

The public desire for automatic conveniences is brought out clearly in this article describing a large scale operation.


## In the Next Issue

In Boston next month, the oil burner industry rallies for its annual convention. In this section and in other pages of that issue, we recognize the event by assembling a complete study of interesting phases of the oil burning business.



**A residential stoker job, connected to a warm air furnace**

# Stoker Selling Pays

IMAGINE selling ninety per cent of all the coal stokers in the City of Baltimore! This is the achievement of the George F. Heubeck Co., located at 2016 St. Paul Street.

When Harry Miller, manager of the stoker department of this company, was asked to what he attributed the great success of his company, he said, "We had the foresight to get on the automatic heat 'wagon' at the very beginning and we have ridden along to fruitful rewards ever since."

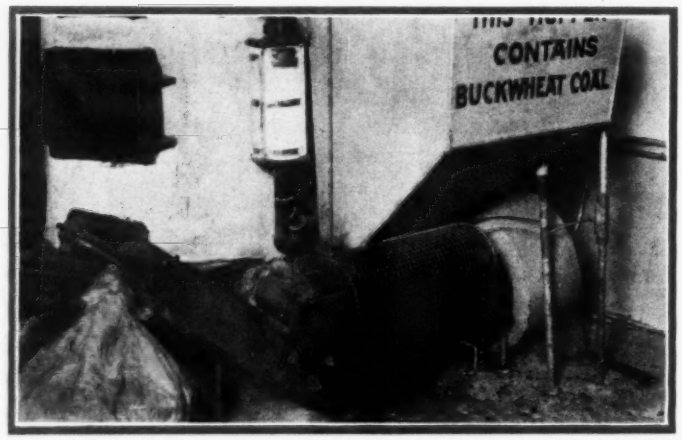
The George F. Heubeck Co. started in business in 1864, and is now being operated by the third generation. Until it added the stoker to its line, its business was confined strictly to plumbing and heating. This company, since its beginning, has maintained a policy that looked with disfavor on high-pressure salesmanship and refused to resort to anything but truthful advertising. When Mr. Heubeck was first approached to take on the sale of a coal stoker, he hesitated and expressed some doubts as to the practicability of a plumbing and heating contractor reaching out of the usual channels.

This reaction was natural to a firm operated on the conservative basis of the George F. Heubeck Co., but four years ago Mr. Heubeck decided that times demanded that plumbers handle allied enterprises. He realized that it was a time when the people were expecting to secure all kindred articles and services in one place, wherever available. He read the times aright, and the fact that his concern has sold approximately nine out of every ten stokers installed in the City of Baltimore proves it.

He learned that this success came by handling, as he expresses it, "what every plumber and heating man ought to handle. Automatic heat," states Mr. Miller, "is something that every plumbing and heating man should be able to provide the public." It is true that this requires special training and experience as well as intelligence to explain, install and service. However, the results justify each plumbing and heating man preparing himself to satisfy these requirements.

When Mr. Heubeck first took on the stoker, he was skeptical whether the results would justify the use of a part of his sales force in studying the salesmanship

AUTOMATIC HEAT SECTION




**This job, in the basement of the firm's building, acts as a demonstration model**

of this product as well as its repair and maintenance. However, he made the decision to add this line to the sales knowledge and mechanical understanding of a part of his force. He soon found that results in dollars and cents justified his decision.

Mr. Miller states that the first sales lesson learned was that a beautifully painted and polished stoker placed in the show room attracted the public, but did not answer the question that they immediately asked: "How does it work?" It was difficult to explain the mechanical operation. The hope that the prospect would be able to carry the "picture" away with him did not prove true. It was proved that the prospect could not remember the process of the operation and that the sales effort lacked conviction.

This was a lesson that was immediately learned, and a stoker was installed in the building's heating plant. Greater interest was displayed by the public and immediately the sales picked up. It was an eye and ear sales demonstration that was far better than just a verbal explanation of the operation and qualities of the stoker.

"When the prospect appeared," Mr. Miller states, "we asked him to look at the stoker in operation—the hot, safe and noiseless fire of a stoker which is a convincing argument and can never be adequately described by words and pictures. The first five sales were our hardest, but after that, resistance was considerably lessened because then we could refer to the installations in actual operation."

### THE LESSON OF DEMONSTRATION

The securing of prospects was a problem that Mr. Miller easily solved by going over his lists of old customers. He determined to make a canvass of all the prospects that this list indicated to him. A large number of these were people who had hot air furnaces and since the stoker is said to work with one hundred per cent efficiency in these furnaces, a number of good opportunities presented themselves with little effort.

Mr. Miller adopted a tried principle of salesmanship—"face to face" solicitations. He does not belittle letter efforts, but he firmly believes that only by following them up with direct contacts can desirable results be obtained. These direct efforts give the salesman the opportunity of inviting the prospect to the company's place of operation or to the home of a user.

Mr. Miller states that one satisfied user of the stoker made recommendations that led to seven sales. This fact has led Mr. Miller to warn the plumbing and heating man who is endeavoring to sell stokers and build up a successful business in automatic heat to be certain that the building in which it is to be installed meets the necessary heating requirements as to radiation. "Before we make an installation," the manager says, "we carefully survey the building and check up everything to determine that the construction and arrangement of the various rooms are suited to the use of a stoker.

"There is no doubt that a satisfied customer is the very best advertisement there is. When a contact is made," Mr. Miller explains, "the first thing is to show the device in operation either at the user's home or at the company's office. The next step is to make the survey and check as previously outlined. We do this because it sometimes develops that certain requirements have to be met to assure the best results. We find that whenever we have recommendations to make it is preferable to first convince the prospect of the need of compliance with them. Usually the recommendations are not complicated, and we can get the prospect to cooperate with us. It can readily be seen that to sell the stoker and later make recommendations might be construed as not being fair."

### SATISFIED USERS STILL BRING SALES

Recently the George F. Heubeck Co. had an excellent prospect in Baltimore's largest sea-food restaurant for a stoker to be used on a boiler for the purpose of steaming oysters. It had to be clearly demonstrated to this shrewd and successful business man that the stoker was worth the investment he was asked to make. The demonstration plus the unqualified recommendations of a satisfied user enabled the company to close the sale. Since then, this restaurateur has several times expressed his satisfaction with the installation, stressing its reliability and its economical operation.

The cost of rendering service seems to be a "ghost" that frightens many plumbing and heating men away from the handling of automatic heating devices. Mr. Miller states, "The cost records of maintenance of our company disclose that this fear is unfounded." Also, some plumbing and heating men have hesitated to take a franchise to handle "automatic heat" because they think they may be forced to render an undue amount of service. This, too, Mr. Miller states, most emphatically,

is not the case. He states, that the "stoker has been mechanically perfected and calls for service are very infrequent." Of course, an enterprising contractor wants to be in a position to render service when it is required. He knows that a call for service enables him to become better acquainted with the user and that this is an avenue for more business.

For example, as a part of the service, the Heubeck company arranged for the listing of a telephone for day and night as well as holiday service.

"Does the service eat up all the profits?" is frequently asked by those who are without experience in this automatic heating system. Mr. Miller answers this question, emphatically, "No. A job correctly installed with the proper precautions at the outset assures the user and the installer very little trouble. It is our policy to render one year's service free, and with the great number of installations we have made, and after four years of such activity, our records show a relatively small service cost. The fear of the heavy cost of servicing heating apparatus should never keep a contractor from handling this profitable item. Stokers should be a part of the equipment handled by plumbing and heating men because by their training and experience they are qualified to handle installations and service the equipment.

### AUTOMATIC HEAT IS MONEY MAKER

"There is money in this line and I enthusiastically recommend to every plumber and heating man in the country that he procure a franchise to handle 'automatic heat.'"

Assuming the same intelligence in handling the fire, coal can be burned more efficiently on a mechanical stoker than on any kind of hand fired grate. This does not necessarily mean that a stoker installation may be economical because the amount of coal burned may be so small or the cost of the installation so high, that the savings with stokers may not be sufficient to pay for the investment. The operation of burning coal involves uniformity in stoking, proper distribution over the fuel bed, admission of air as required to all parts of the fuel bed and disposal of the ash. The handling of the volatile gas is largely a matter of heating value of the coal, it may also be said that the proper handling of this gas is a function of firing. All mechanical stokers must provide means of taking care of these several functions in order fully to serve their purpose.

### CLASSIFICATION OF STOKERS

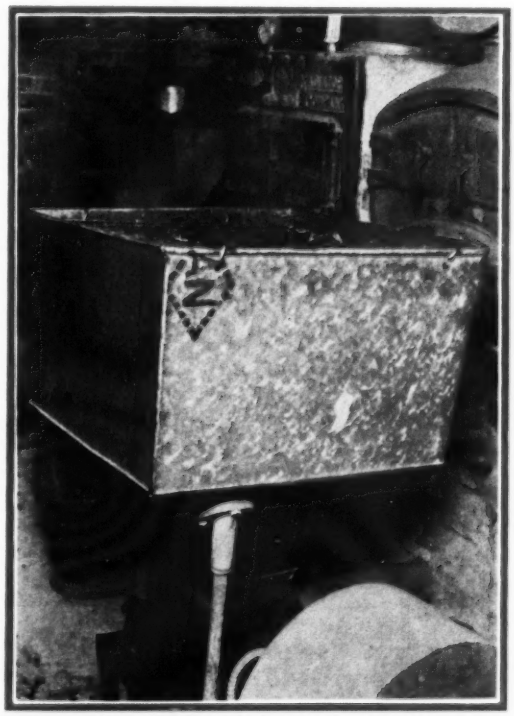
Stokers may be divided into four types according to their construction and operation, namely, (1) overfeed flat grate, (2) overfeed inclined grate, (3) underfeed side cleaning type, and (4) underfeed rear cleaning type.

Stokers also may be classified according to their uses as, (1) domestic, (2) small industrial, (3) large industrial, and (4) power.

This field includes sizes up to 2500 sq. ft. of radiation. A common type of stoker in this class consists of a round retort having tuyeres at the top where all of the air for combustion is admitted. Coal is fed from a storage hopper outside of the boiler by means of a worm into the bottom of this retort and beneath the fire.

The equipment includes a blower which is driven by the same motor that drives the stoker.

Some domestic stokers are provided with automatic grate shaking mechanism together with screw conveyors for removing the ash from the ashpit and depositing it in an ash receptacle outside the boiler. Certain types can also be provided with a coal conveyor which takes coal from the storage bin and maintains a full hopper at the stoker. They may feed coal to the furnace either intermittently or with a continuous flow regulated automatically to suit conditions. Where the boiler is provided with indirect coils for heating the domestic hot water, the stoker may be so arranged that it can be used all year for hot water.



**"Feeding" the boiler on a larger size residential job. Another Heubeck installation**

# Piping Changes Stop Noise

*By* EARL BROWN

WHEN I was going through my files the other day I found copies of correspondence that I exchanged with a heating contractor late last fall. This dealt with the proper location of orifice plates in an automatic heat job, and is given in the following:

Griffith, Nebraska,
Oct. 20, 1931.

Dear Mr. Brown:

When I was located in Orkley, Ill., you helped me on a number of trouble jobs, but since I moved out here I have had to solve all of my own problems. I am happy to tell you that I have been quite successful in avoiding trouble so far, but now I have a job which has me puzzled.

It is a fine residence in which I installed a vapor system, using a gas boiler. The boiler is controlled by a thermostat located in the dining room and has the usual pressure stat and other controls. Completely concealed radiators are used throughout.

When I installed the job I did not use orifices but it heated so unevenly that I finally wrote to the vapor system specialty company for orifices. When I installed them the house heated evenly but the job became very noisy. Every time now when the thermostat starts the boiler all the radiators in the house gurgle and bang like a boiler factory. The second floor radiators are the noisiest and they keep on pounding as long as the boiler is going. The first floor radiators are not quite so noisy and the noise lasts only five or six minutes after the radiators are hot.

It sounds like water hammer to me, but I've cleaned the boiler until the water line is as steady as can be, so I don't believe the boiler is throwing water.

As I said, the radiators are completely concealed, so the traps are installed in the basement. No supply valves are installed because the radiators are controlled by the outlet dampers. When the orifices arrived I installed them as shown in Fig. 1 and then the racket began.

My foreman insisted that the orifice plates should be installed in the horizontal runout, so we changed them all, as shown in Fig. 2. There wasn't a bit of difference—in the noise, after all our trouble. If I take out the orifices the house will heat unevenly and if I leave them as they are the noise is dreadful.

Can you help me out? I'll be grateful for any suggestions.

Your old friend,
John Robison.

Des Moines, Ia.,
Oct. 23, 1931.

Dear Mr. Robison:

Your letter of Oct. 20 was very interesting. I am glad to offer a few suggestions.

The orifices make the job heat evenly because they hold the radiators in step. This is done by selecting

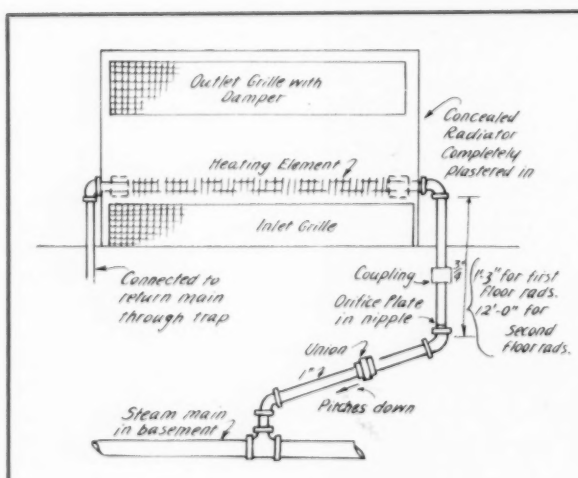



Fig. 1—These are the connections with orifice which proved to be noisy

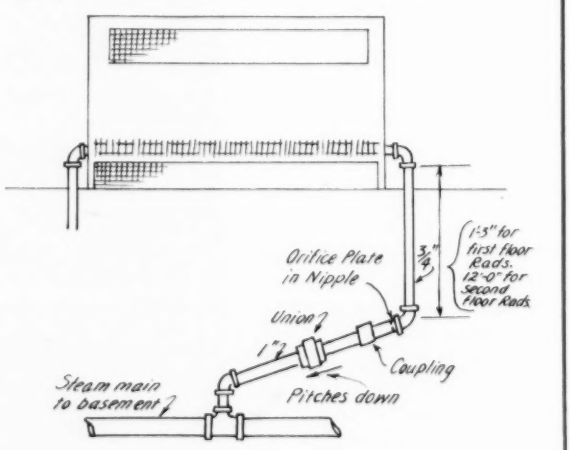



Fig. 2—Changing the orifice to the location shown above did not correct difficulty

them so that the radiators that would normally heat up first are held back a great deal while the slow radiators are held back only a little. The steam is held back by making it squeeze through the orifice in the orifice plate. Since this orifice is quite small the steam must go through it at a very high speed. Any water which flows in the same direction as the steam is picked up and carried right along. On the other hand, any water which tries to flow in the other direction has a mighty hard time of it. The steam is flowing so fast that it blows the water back every time.

What happened when your orifices were installed is this: The first steam that went through the orifice condensed when it hit the cold riser to the radiator and the water dropped down and tried to flow through the orifice. However, the high speed steam would not permit it to flow back, so the water continued to collect on the discharged side of the orifice. In the meantime the steam blew through the water, causing the noise that worries you.

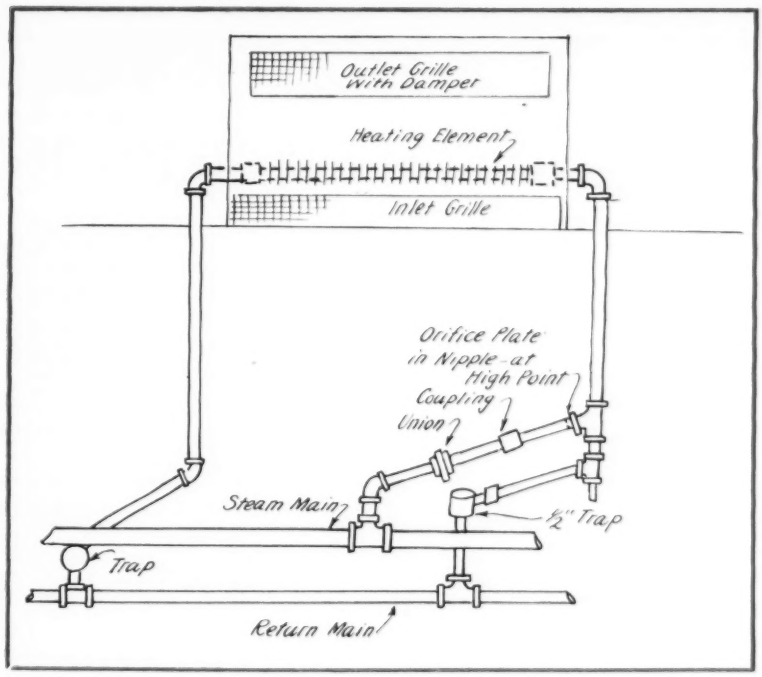



**Fig. 3 — The above connections show a revised arrangement which eliminated the noise**

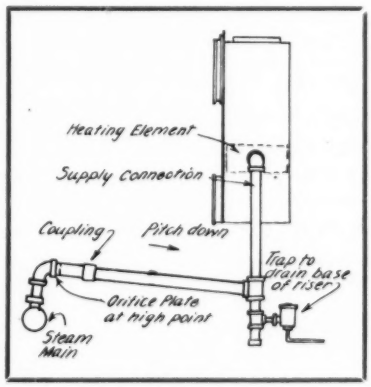



**Fig. 4 — The sketch at the left shows a properly located orifice plate**

In the case of the first floor radiators the steam soon blew most of the water up the short riser and into the radiator. This explains why the noise in these radiators lasted such a short time. The steam going to the second floor radiators could not blow the water out of the high riser, so the noise continued as long as the steam flowed.

The change which your foreman suggested, sketched in Fig. 2, did not help because the water still had to flow back against the steam to get out of the riser.

It will not be difficult to cure this job, though a little more equipment will be required, for some means must be provided to remove the water that collects on the discharge side of the orifice. In this case, I believe the easiest solution will be to remove the ell at the base of the riser shown in your Fig. 2. Replace this with a tee and drain the bottom of it into the return main by means of a small trap as shown in my Fig. 3. The trap will remove the water as quickly as it is formed and the job will be as quiet as it was before you installed the orifices. A ½-in. trap will be large enough because it will have only a little water to remove.

I believe this will solve your problem. I am sorry I can not suggest a less expensive cure, but I believe the change shown in Fig. 3 is the only thing you can do at this time. If you were just installing this job, I could suggest a simpler scheme.

Very truly yours, Earl Brown.

P.S. When I read over the above suggestions it occurred to me that I should caution you to be careful when using the scheme shown in Fig. 3. Since the orifice plate was installed near the base of the riser and the horizontal runout pitched up to it, I suggest that you leave everything as you had it except to add the trap.

Please notice that the orifice plate should always be installed at the high point, and if for some reason you must install the orifice plate near the main, use the arrangement shown in Fig. 4. For the arrangement shown in Fig. 3 the orifice must be installed at the high point or water will accumulate above it. In Fig. 4 the high point is desirable in order to have as little pipe ahead of the orifice in which scale may be formed as possible. Scale is very likely to plug up an orifice. E. B.

Oct. 30, 1931.

Dear Mr. Brown:

Your letter of Oct. 23 has been received. We made the change you suggested in Fig. 3 on the same day that we received your letter. I am sure you will be interested to know that the job is working perfectly and the owner is very much pleased. I'm very grateful to you, indeed.

In the last sentence of your letter you said that if this

had been a new job you could have suggested a more simple arrangement. I am going to install a similar job in a few weeks and I'd like to be sure I'm right.

We are going to use a vapor system and a gas boiler controlled by a room thermostat just as we did on the other job. The only difference is that another make of concealed radiators will be used. They will be completely plastered in, so the traps will have to be in the basement. No supply valves will be used. After reading your last letter I decided to install the orifices as shown in Fig. 5. If the orifices are installed right at the radiator I do not believe they will be noisy because the water can not collect on the discharge side of them. Am I right? Please let me hear from you as soon as possible.

Very truly yours,

John Robison.

Des Moines, Iowa.
Nov. 3, 1931.

Dear Mr. Robison:

I am glad to hear that you cured your noisy job.

I hope you receive this letter before you get started on the job you mentioned in your letter of Oct. 30.

You are quite right when you say that no noise will be experienced if the orifice plate is installed at the radiator as shown in your Fig. 5. However, this arrangement has one big drawback—the orifice plate can not be removed or cleaned without breaking into the plaster. In a fine home this is a very expensive thing to do.

Remember, the orifice in an orifice plate may be only ⅛-in. in diameter and such a small hole is easily plugged up, so that cleaning may be necessary. Then, too, you may have to change an orifice some day because the lady of the house may decide that she wants one room warmer than another. For these reasons, all orifices should be installed where they may be removed or cleaned easily.

You have not told me much about the piping layout which you plan to use, so I'll just assume that you can use either an upfeed or a downfeed system.

In many fine residences a downfeed system works out very nicely. The supply mains are run in the attic and only the small return mains are in the basement. This is very convenient when they have a card, recreation or play room in the basement, because the small return piping can be easily concealed. Then, too, with a downfeed job the problem of locating the orifices is greatly simplified.

As shown in Fig. 6, the orifice plates may be located either in the vertical drop or in the horizontal runout, because in either case the water will flow with the steam. The problem of scale which might plug up the orifice makes the upper location the preferred one because the less pipe drained through the orifice the less chance there is for scale to accumulate. For this reason the orifice should be located as close to the high point as possible. Please notice that if this scheme is used, the attic main will have to be drained through a separate trap. This is advisable because if this main is drained through orifices the chances for dirt plugging them are too great. I would suggest that you use the scheme shown in Fig. 6 if you possibly can.

Yours truly,

Earl Brown.

Griffith, Nebraska,
Nov. 5, 1931.

Dear Mr. Brown:

Your letter of Nov. 3 was very enlightening and I am planning to use the arrangement shown in your Fig. 6. However, there is one radiator which will have to be upfeed and several downfeed radiators where the orifices located as shown in your Fig. 6 would be in-

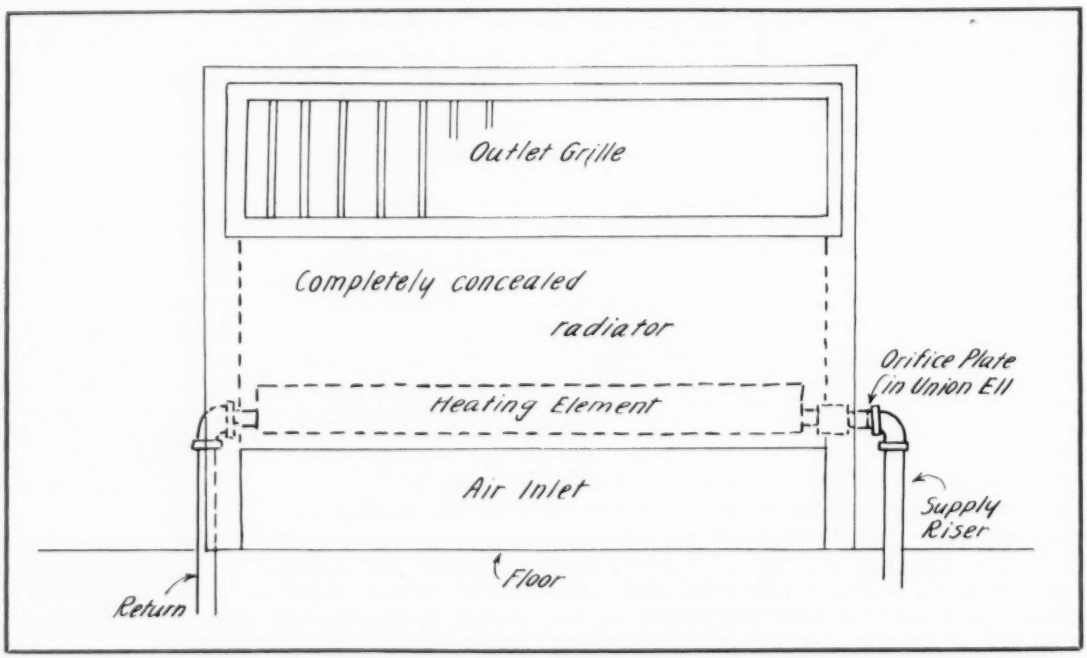



**Fig. 5—In this drawing, the radiator is shown as completely concealed. While the orifice, as located will not cause noise, it is inaccessible for removal or cleaning**

Spencer says:

# Don't Wait for Business—CREATE It

*Cover of Folder Sent to Heating Contractors Announcing Spencer Campaign*

## You Can Stop This And MAKE MONEY Doing It NOW

**People today are taking the dollars they skimp and save on food—and clothing—and theatre tickets—and shovelling these same dollars "into the furnace". High coal bills—wasted heat—that is where people are still squandering their money.**

## The times are ripe for this kind of sales appeal Spencer **ALONE** can meet this situation

Last February, Spencer Heater Company started a sales and advertising drive, although there is never supposed to be any heating business that month, even in the best of years. We took this depression thing that seemed to have everybody licked and made ammunition of it. We told people, through full page advertisements, "A dollar *lost* in your *basement* is as *big* as one *saved* elsewhere." Then we showed them how a Spencer Boiler would save these dollars, wasted in costly fuel, incorrect firing and antiquated heating plants. Just another example of how Spencer is always doing something to CREATE business, regardless of "conditions." Write us for the complete story of this campaign, and full details of what the Spencer proposition can mean to you in increased sales and profits.

**SPENCER**
*Magazine Feed*
**BOILERS**
*for steam, vapor or hot water*

SPENCER HEATER COMPANY
Williamsport, Pennsylvania
*Division of Cord Corporation*
The Spencer Foundry Company, Ltd., Toronto, Ontario, Can.

AUTOMATIC HEAT SECTION

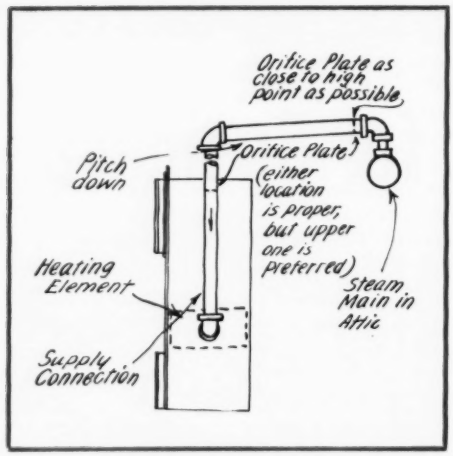

Orifice Plate as close to high point as possible
Pitch down
Orifice Plate (either location is proper, but upper one is preferred)
Heating Element
Steam Main in Attic
Supply Connection

**Fig. 6—Here are orifice plates which are properly located**

accessible because of the very low attic height over this portion of the building. Where do you suggest that I locate the orifices for these radiators. If possible, please let me hear from you by the 7th.

Very truly yours,

John Robison.

Des Moines, Ia.,
Nov. 6, 1931.

Dear Mr. Robison:

I am pleased to know that the arrangement shown in my Fig. 6 appealed to you.

Just the other day I met an old friend of mine who is chief engineer for the company which is furnishing the concealed radiators for your job. He told me of the knockouts which they now provide in their cabinets to permit the orifice plate to be installed in their radiator cabinets when they are completely concealed.

In Fig. 7 I've shown a radiator piped in this way. You will notice that the upper supply pipe goes right through the upper part of the cabinet. This permits you to install the orifice plate in the pipe where it can be easily removed or cleaned by merely taking out the outlet grille. Instead of the union I've shown you, a "right and left" can be used if you wish.

The upper supply pipe should be level or else pitch down in the direction of the steam flow. For this reason the supply piping can come either from above or below, though it is preferable to have it come from below because there is less chance for scale to accumulate. This is not very important, though, for the orifice can be easily cleaned if necessary.

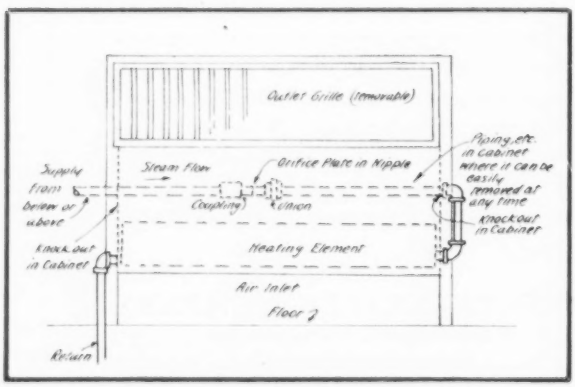



**Fig. 7—With this set of connections, it is possible to reach the piping and the orifice through the grille in the event that changes and cleaning are necessary**

Very truly yours,

Earl Brown.

Griffith, Nebraska,
December 30, 1931.

Dear Mr. Brown:

I used the arrangement shown in your Figures 6 and 7. They both worked out very nicely and I want to thank you for your help.

Yours truly,

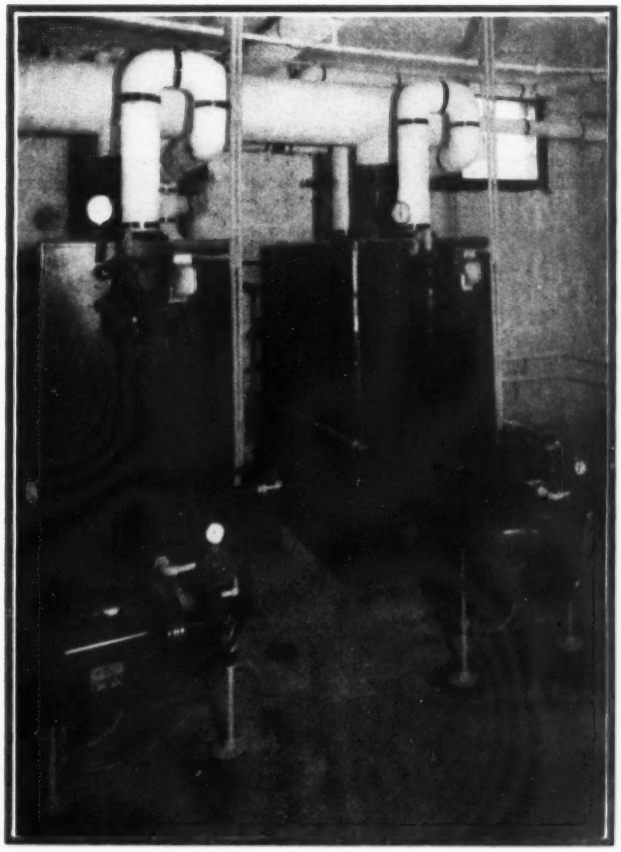
John Robison.

### ORIFICE OR REGULATING PLATES FOR INLET RADIATOR VALVES

In order to insure a uniform distribution of steam to each radiator in a low-pressure vapor or vacuum heating system, according to Harding and Willard in *Mechanical Equipment of Buildings*, the resistance offered to the steam flow should be equalized in order that the various sizes of radiators may heat up with about the same rapidity. The tendency of the radiators located nearest the boiler is to take more than their proportion of the steam. In order to overcome this tendency, an orifice or regulating plate may be inserted in the union connection of the radiator inlet valve for each radiator. The diameter of the orifice is made such as will pass the amount of steam which the radiator will condense in normal operation with 70 deg. Fahr. room temperature for the initial pressure to be carried.

As the orifice plate limits the steam flow to approximately the amount required for normal operation (70 deg. Fahr.) it is apparent that this scheme serves the useful purpose of preventing, to a considerable extent, the unnecessary load on radiation and boiler caused by the practice of opening windows to either reduce the room temperature or secure a greater amount of ventilation by the introduction of outside air than the radiation was intended to carry.

# Sell the Job Right



**A double installation that is used frequently to demonstrate for prospects**

SELLING an automatic heating job that amounts to several hundred dollars, or swinging a $125,000 heating installation contract, is one and the same proposition to Mullen Brothers & Company, Inc., 1036 Main street, Dubuque, Iowa, plumbing and heating engineers and contractors for 37 years.

Each and every job installed represents quality, workmanship and heating efficiency. Satisfaction is guaranteed through a service, free the first year, and at a nominal charge for every heating season thereafter.

Service with Mullen brothers is a byword and L. J. Hall, sales manager, with the firm since 1922, pins it to actual facts in recounting the first heating job placed, in 1922. That installation was serviced regularly each year until 1929 when the firm again sold its first customer the latest and most modern type unit.

As an aside, getting into the automatic heating line was, more or less, a chance affair. Discussing automatic heat with a banker friend, who wished to try out an oil burning unit as a sporting proposition, resulted in a trip to Chicago where the line handled was decided upon. Incidentally a refrigeration franchise was also chosen. For, as the banker said, "The two go hand in hand."

### OVER THREE HUNDRED INSTALLATIONS

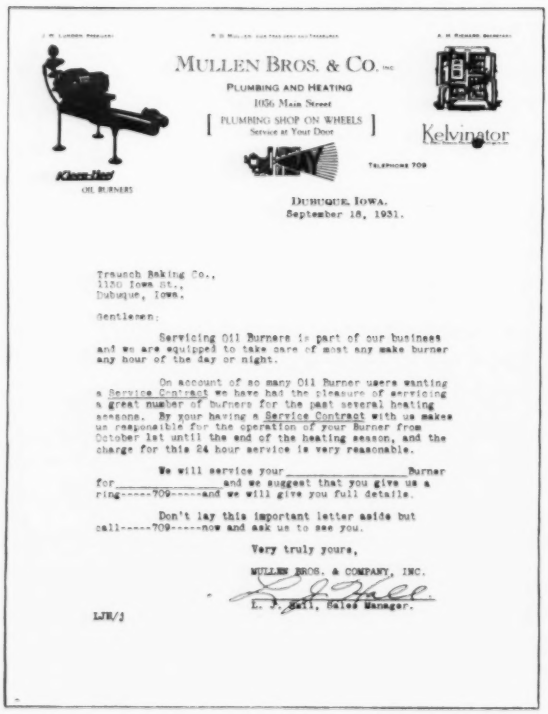
Mullen Brothers have placed more than three hundred automatic heating units since 1922 when the line, handled exclusively, was taken on. An average of fifty heating units are being placed yearly now, with ninety-five per cent going into homes. The first years, the going was slow with only Mr. Hall and a salesman pushing the automatic heat line exclusively. In 1931 five salesmen were put on the road. While allied lines are carried, the big money-maker is in the automatic heat line.

Getting down to particulars, Mullen Brothers found little results from their newspaper advertising. Consequently, this expense is negligible. Billboards, theater trailers, alternating in various movie houses each week, show programs, a plumbing shop on wheels, a show window, service favor novelties, service contract, and direct mail advertising, keep the firm constantly in the public eye. While Mullen Brothers believe in newspaper advertising, and that it has its place along educational lines, it has determined that dollar for dollar, its own advertising-salesman program has brought more consistent returns. Mullen Brothers found that out during the early years of selling automatic heat.

There has been no trick of legerdemain performed in building up and maintaining, particularly, "in these depressed times," a good business. Every man on the Mullen sales staff knows his job. If there is a technical problem to meet, services of an engineer are available. On the first job installed, a yearly cost was charted for seventy tons of anthracite coal. Figures resulted

AUTOMATIC HEAT SECTION

**Neon lighting effects draw attention to an autumn window display. Below—Letter sent to prospects to secure service contracts**



MULLEN BROS. & CO. INC.
PLUMBING AND HEATING
1056 Main Street
[ PLUMBING SHOP ON WHEELS
Service at Your Door ]
Kelvinator
TELEPHONE 709
Kleen Heat OIL BURNERS

DUBUQUE, IOWA.
September 18, 1931.

Trausch Baking Co.,
1120 Iowa St.,
Dubuque, Iowa.

Gentlemen:

Servicing Oil Burners is part of our business and we are equipped to take care of most any make burner any hour of the day or night.

On account of so many Oil Burner users wanting a Service Contract we have had the pleasure of servicing a great number of burners for the past several heating seasons. By your having a Service Contract with us makes us responsible for the operation of your Burner from October 1st until the end of the heating season, and the charge for this 24 hour service is very reasonable.

We will service your _____ Burner for _____ and we suggest that you give us a ring-----709-----and we will give you full details.

Don't lay this important letter aside but call-----709-----now and ask us to see you.

Very truly yours,

MULLEN BROS. & COMPANY, INC.

L. J. Hall, Sales Manager.

LJH/j

in a $300 fuel saving on the installation, plus automatic heat. The instance is cited merely to show that if figures are wanted they may be had.

But in no case do Mullen Brothers depend on the saving as a real sales argument, for controlled heat, as against constant heat, is subject to many abuses. In fact when brought up, as it frequently is, it recalls one of their experiences. In checking costs on one job, it was brought out that something was wrong. In the seven room home, warm air furnace equipped, there are towel racks in the kitchen and bathroom, located over warm air registers. Ofter when some pet item is soiled there is a desire to wear it at once. Wash it, hang it over the register and then jump the thermometer control, despite the room temperatures being cozy. Just uselessly heating seven rooms to dry out a small garment.

The result of a policy of educating customers, getting the male member of the family to know his plant, and the women of the family to use discretion on the thermometer and the service phone number has made for an ever-growing group of satisfied users.

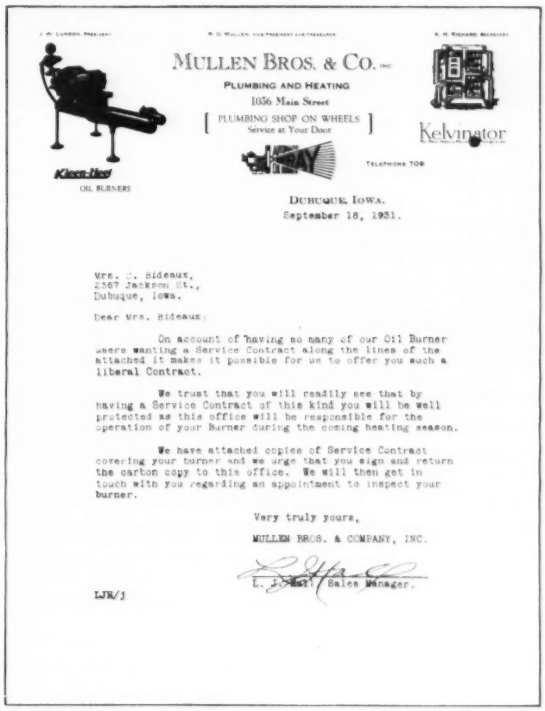
### LOCATING PROSPECTS

But as to getting the prospect. How about it? A simple matter for Mullen Brothers and can be made so by any dealer similarly situated. Mr. Hall has spent

his entire life in the city of Dubuque. This is his town and he has made it a point to classify thousands of individuals who may be, or develop, into live prospects. To supplement this personalized information concerning residents, there is available a daily service which covers all building, repair, remodeling and installation permits issued in Dubuque. The same service furnishes marriage licenses, births, automobile licenses, assignments and conditional sales contracts. It goes to business houses at a nominal cost in mimeographed form. Then city and county papers are checked for likely items, salesmen in the main doing much of the work in their own interests.

This list, received every afternoon, is roughly divided for work next day, as to immediate contact, direct mail, or for service contract, present, or future. This is as regards heating. The list also serves as a prospect guide for other lines, water heaters, softeners, electric refrigerators, radio and smaller lines. Primarily the data is for automatic heat purposes.

Two cards are available for prospects, depending on their character. One contains the prospect's name, home and business addresses, phones, date called, remarks, date sold and salesman's name. The other contains the months, used as a check on calls, tickler, or service call check, name, home address, phone, oil burner, gas, or coal, call when (a.m. or p.m.), office, residence, busi-



MULLEN BROS. & CO. INC.
PLUMBING AND HEATING
1056 Main Street
[ PLUMBING SHOP ON WHEELS
Service at Your Door ]
Kelvinator
Kleen-Heat OIL BURNERS
TELEPHONE 708

DUBUQUE, IOWA.
September 18, 1931.

Mrs. J. Rideaux,
2567 Jackson St.,
Dubuque, Iowa.

Dear Mrs. Rideaux:

On account of having so many of our Oil Burner users wanting a Service Contract along the lines of the attached it makes it possible for us to offer you such a liberal Contract.

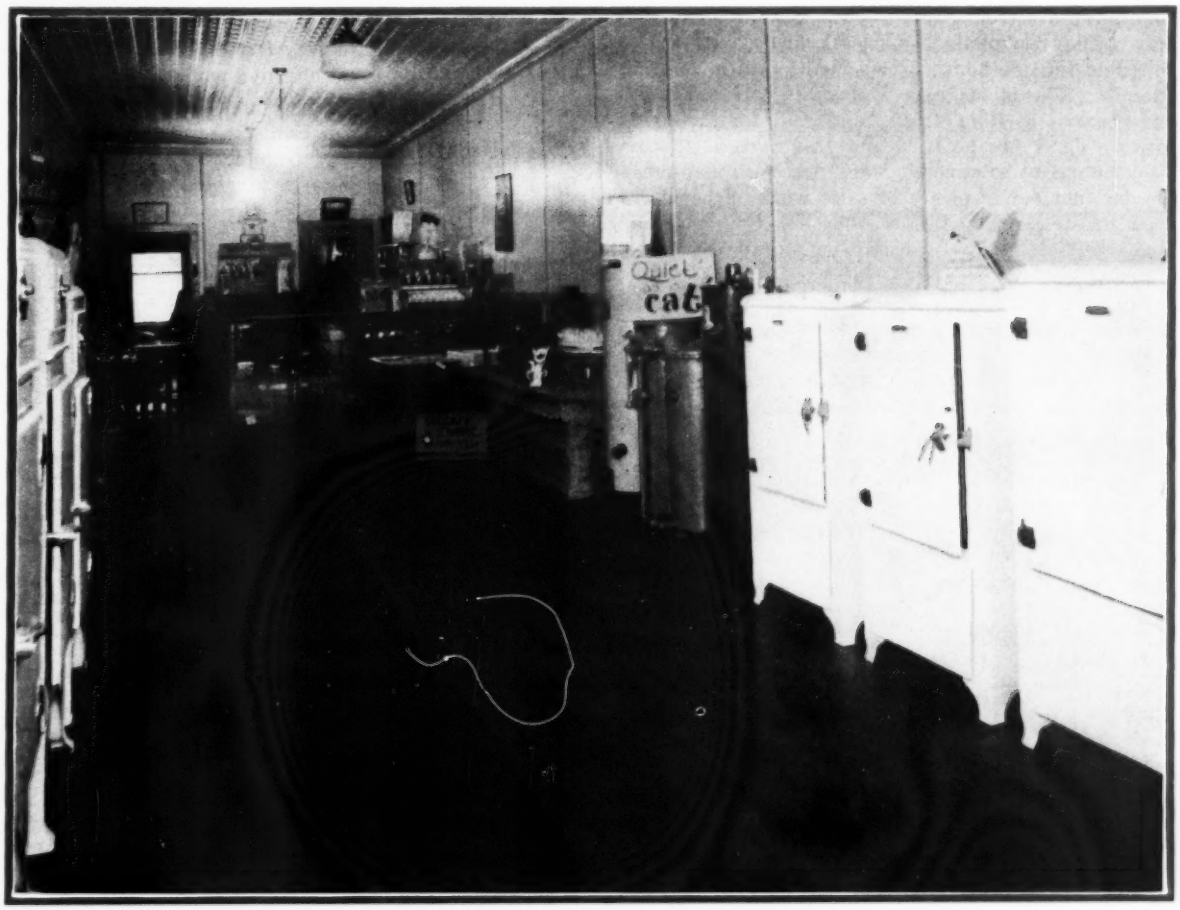
We trust that you will readily see that by having a Service Contract of this kind you will be well protected as this office will be responsible for the operation of your Burner during the coming heating season.

We have attached copies of Service Contract covering your burner and we urge that you sign and return the carbon copy to this office. We will then get in touch with you regarding an appointment to inspect your burner.

Very truly yours,
MULLEN BROS. & COMPANY, INC.
L. J. Hart, Sales Manager.

LJH/j

**They offer just about everything in plumbing and heating that the modern home needs. Above—Another letter that gets service contracts**



AUTOMATIC HEAT SECTION

**What the Mullen Bros. letterhead looks like**

*The "sell the job right" spirit in the firm of Mullen Bros. & Co., begins to work long before an installation is made. First there is the locating of prospects—a task which is as carefully "engineered" as the actual installation of an oil burner. Then follows the advertising-salesman selling combination, directed with the greatest precision possible against the classified prospects in the company's files. And after installation, far from trying to sidestep the matter of service, Mullen Bros. & Co., go out after service contracts, on a 24-hour basis—which very likely means that the company makes money on service contracts; again, probably, because of the "sell the job right" slogan.*

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ness, position, business address, phone, remarks and salesman's name.

If it is a direct contact prospect, one of five salesmen gets the card. These salesmen work on a drawing account, varying from $25 to $50 a week, and are paid only a sales commission. One salesman covers the entire state for one item, for which the firm is state distributor. The others have Dubuque, Dubuque county, and counties in Illinois and Wisconsin for their territories. There are no hard and fast rules as to time-clock efforts of salesmen. Some prefer to loaf during the day, but put in plenty of sales work on home calls after the dinner hour. Calls and sales count, not time put in. They are expected, however, to make fifty calls a week.

They are given plenty of training under two or more executives in the field, helped by correspondence courses, sales conferences and other salesmen helps. The supervision idea has gone into the discard and direction aids substituted along with technical assistance.

### WORKING WITH THE SALESMEN

With the issuance of seven cards the firm has figured and expects one sale in seven contacts made. That sale is preferably for automatic heating units, but a sale of some appliance should result. Where no deal has been closed after seven calls are made, the prospect is filed for a time, or goes into a resurrection file. No prospect is ever dead to Mullen Brothers unless buried.

Meanwhile the direct mail element has entered the homes of lukewarm possibilities, and other prospects are prepared for a first salesman's visit. In some instances, cards are sent out, one, two, or three, a week apart, or a series of folders and these are timed for salesmen's visits, or tied up with national promotion through newspapers. There is, however, a close, personal analysis of the prospect on type of matter to be sent, results of which have justified the extra effort. And when salesmen depart after having visited a prospect there is always plenty of literature left behind.

When a sale is made, the uniform sales contract covers the installation, or is governed by plans and specifications in contract awards. Accepted practice is followed in conditioned sales contracts. With dozens of men in varied lines constantly on the payroll of the firm, installation of home heating units is an excellent supplement and is a balance. And it makes for a quick service on installations.

With the unit installed and functioning, visits to the home are made and in the words of Mr. Hall, "Continued until they won't let us in any more." On the occasion of the calls a wall plaque thermometer is left. Then again it is some other usable novelty.

### SERVICE FOLLOWING THE INSTALLATION

The free service of a year with each installation makes it a simple matter to bring up the advantage of the service contract as featured by the firm and its nominal cost, $18 per season on a cash basis, or $20 in two payments, for the years when free service is no longer available. Leaving copies of the contract keeps open that avenue and gives owners an idea of the service they will get for the money. Where their competitors have made installations, form letters go out to the owners with a salesman making a follow-up call when the direct mail appeal fails to elicit a response.

A specific instance of the service that is given by Mullen Brothers is of more than passing interest and illustrates graphically what in their business the term means to them. In a heating installation that was just being completed, it was found that a certain type of valve would do more effective work.

The job was needed at once and the nearest available source of supply was in San Francisco. It cost just $19.50 in air mail postage from that point to Dubuque, Iowa, to get the needed parts, weighing only a couple of pounds. But it placed the heating unit in operation a day sooner.

Mullen Brothers' window has probably attracted more attention than any other single unit in town. Until recently it was illuminated with x-ray type floodlights, some 300-watts being used. Always excellently trimmed, it parades a constant and ever changing variety of heating and other line units. Recently it was made an outstanding attraction through placement of a Neon illuminating unit at a cut of fifty per cent in the light bill. Trim expense has been slashed with an increase in effectiveness. This was accomplished through a window trim contract at $12 per month with two changes, others in proportion. A detailed cost analysis is impossible, although refrigeration and heating split the window bill, but with radio added, another allocation of expense is in line. However, the heating end has more than held its own and has aided in carrying some of the lesser lines and giving them a foothold.

As an illustration of the intangible interconnection between the refrigeration and heating lines, refrigeration prospect contacts during the summer of 1931 has furnished 200 live oil burner prospects.

Success in business may be attributed to constant, hard and efficient work, but there has been a motto in the Mullen Brothers organization for 37 years that has

permeated the organization and made it an outstanding and ever growing institution. It comes from the firm heads and goes down the line to every last employe.

"Sell the job right."

# Builder Finds Oil Burner Sells Houses

GEORGE McKNIGHT is one of Detroit's prominent residential builders. His homes are outstanding in Sherwood Forest and Palmer Woods. These two new and exclusive sections of metropolitan Detroit typify the latest and best developments of modern building and allied trades. Values range from $35,000 to well over the $200,000 mark.

The whole district has sprung up in the past few years, and, as a great share of the building has been done on speculation (without the commitment of a definite buyer) there has been the keenest of sales competition—especially in these dog-days of real estate. However, Mr. McKnight has gone on taking his profits, while many of his competitors have found themselves tied up with all their capital in fixed assets which they could not move.

We asked him for the secret of his success and he showed us some of his houses. Each was eloquent testimony to the fact that he gives the buyers what they want. He has studied people as well as houses and he profits by his combined knowledge of supply and demand. His houses are impressively attractive and are complete in all the desirable features of modern building.

From floor plugs to woodwork, from garage to library, his houses are replete with these conveniences which have resulted in the comfort-standards of present day living. He is practical, and has made excellent utilization of all available space without sacrificing anything. His basements are just as different from those of a generation ago as day is from night, and the comparison is fitting because they are so bright, attractive, and usable. The cleanliness of oil heat has transformed the whole of basement possibilities. They yield themselves to livable rooms—as easily kept clean as the rest of the house.

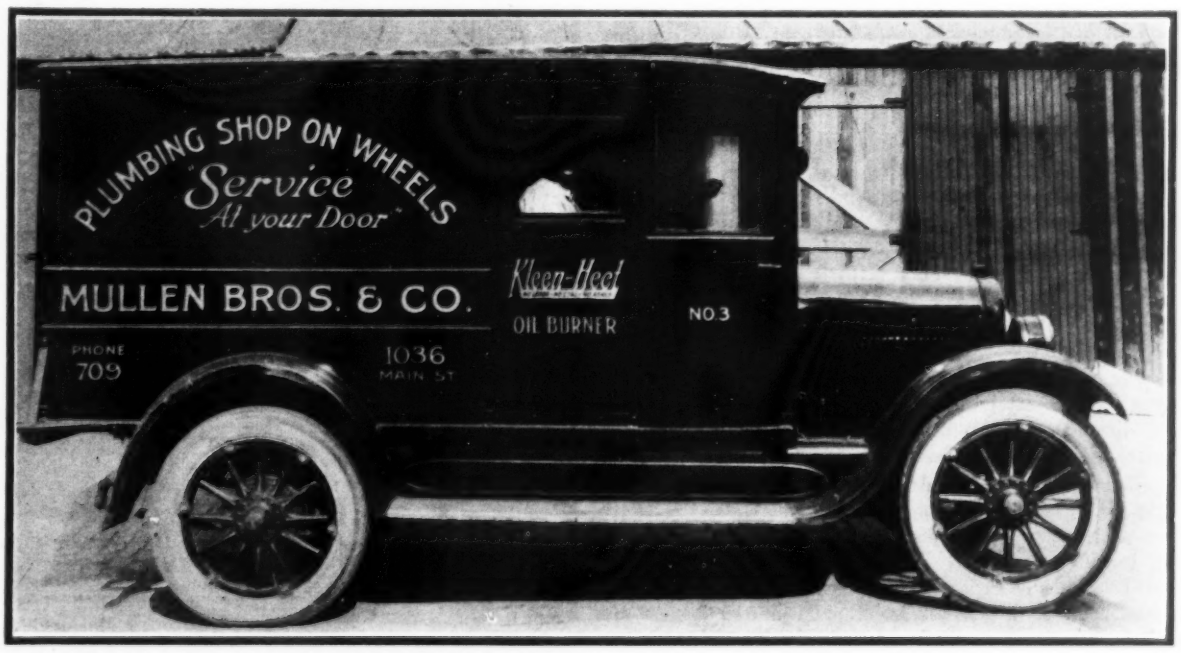
That portion of any house below the grade line represents a considerable share of the entire value invested. Therefore, by making better use of basement space, he is increasing the return on his investment and reducing the amount of money necessarily tied up by the owner for what he gets. By giving greater value, he realizes a much quicker turnover and also increased profits.

Mr. McKnight lives his belief that an oil burner is a good investment for him increasing the salability of the houses he builds on speculation. He insists as a matter of course that oil heat has achieved universal demand in houses of the class he builds. He does not say that automatic heat has received popular public acceptance but specifically states that automatic oil heat is definitely presupposed, expected, and positively demanded by all prospective purchasers alike.

To quote Mr. McKnight, "People expect automatic heat—it is just as much a part of a new house as the wiring and plumbing fixtures."

This experience would seem to be borne out by the various real estate developments undertaken in the last year or so. Modern improvements of all kinds—automatic heat among them—are now used by builders and owners to make the new homes attractive to possible purchasers.

AUTOMATIC HEAT




**A shop on wheels that takes quick service to customers**

AUTOMATIC HEAT SECTION

# Heating for Big Home Building Project

*By* F. T. HEAD

AN INTERESTING development of the past year has been the growing realization on the part of the public as to the general desirability of automatic gas heating.

The idea of gas heating is not new, of course. For many years this fuel has been widely used for heating homes in those sections where natural gas is available. It has also been used in the more expensive type of homes in the manufactured gas territories, but the general impression has been that gas heating was too costly for anyone except the wealthy.

Recently, however, this idea has changed and today the public is showing not only marked interest in the automatic use of gas fuel, but also is demanding an opportunity to make a careful check of it.

Definite proof of this changed attitude is seen in the recent developments in New York City and the metropolitan area.

There are many facts to prove this increased interest on the part of the public.

Within the past twelve months, three large real estate projects in this section have adopted automatic gas heat for a total of 1,200 homes, all of which are priced to sell for less than $10,000.00. This, in itself, is positive refutation of the belief that only a limited class can afford to use manufactured gas for heating. In addition, automatic gas heating has actually proved to be one of the strongest selling points for these homes, indicating that the public is thoroughly sold on the comfort and convenience of a completely automatic heating system.

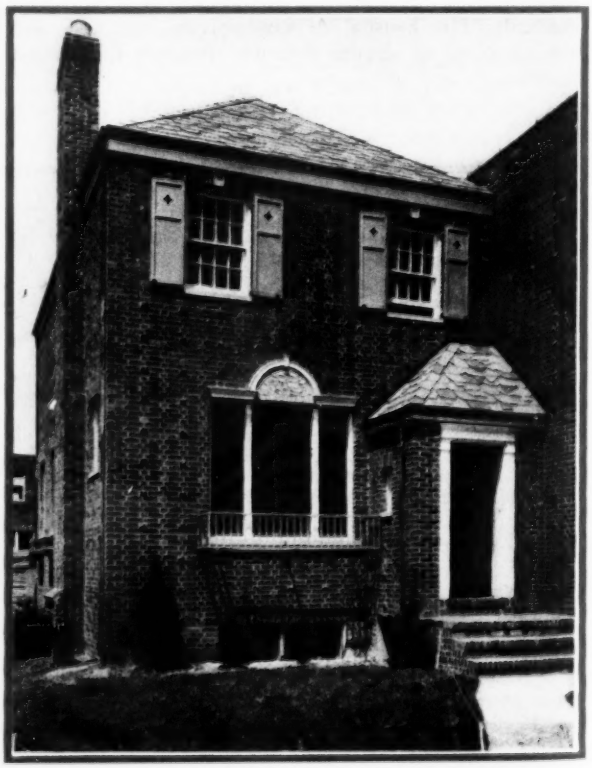
A total of more than one hundred thousand people have inspected the homes in these three developments, each one of which has broken existing sales records for their respective neighborhoods. Yet the only major difference between these homes and thousaands of others recently constructed in this section is the automatic gas heating equipment. This attracted the large crowds and led to the splendid sales record.

Estimated operating cost was based on figures covering average winter temperatures for several years. It has been the experience in supplying gas in this locality, that approximately 1,200 cu. ft. of gas per square foot of direct cast-iron steam radiation is required to adequately heat buildings of this size.

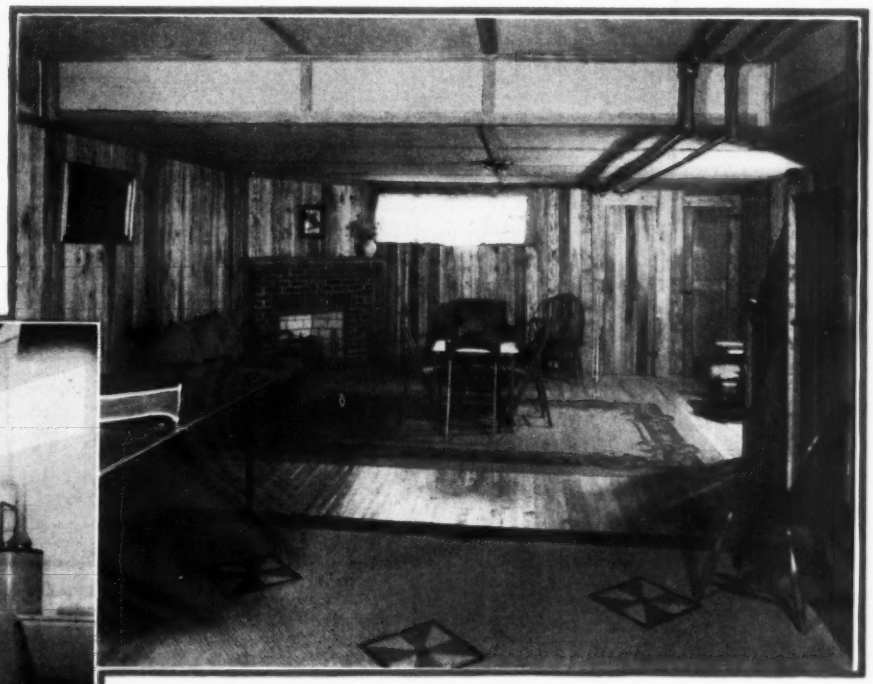
The first of the three developments to use gas for heating was that at Queens Village, Long Island. These six and seven-room brick houses are lined with a layer of insulating material. They were offered for less than $9,000, with the result that nearly all of the 200 planned have been sold. The appointments in the homes are among the finest available. In addition to automatic gas heat, there is a self-action gas water heater and a console-type gas range. The radiation required to heat these homes to 70 deg. Fahr., with the outside temperature at zero deg. Fahr., is 270 sq. ft. of direct cast-iron steam radiation or its equivalent. The estimated gas consumption for the heating season is 325,000 cu. ft. for each house.

The 500 dwellings constituting a second development are announced as "All-Comfort, All-Service, All-Gas Equipped Homes." These solid brick attached type houses, consisting of six rooms, bath, and breakfast nook, are lined with a layer of insulating material. They are completely equipped with automatic gas appliances, including the refrigerator, water heater, range, and house-heating boiler. The estimated gas consumption for heating these homes is 205,000 cu. ft. per heating season.

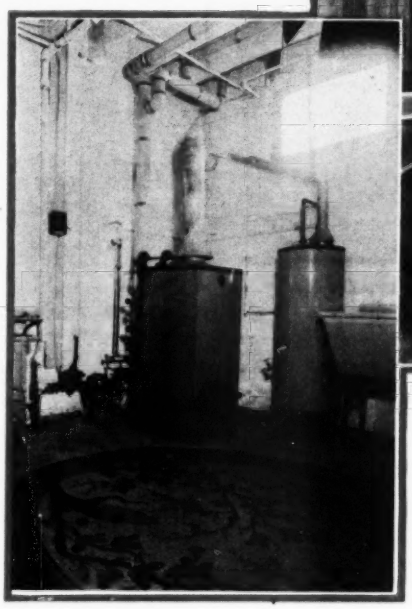
Main Street Homes is the latest of the large developments to use gas heat. This firm opened its development of 500 gas-heated homes of the attached type on



**This is one of the 1,200 homes, constituting the project described in this article, which are heated with gas. It is the end house of a line of attached dwellings**



**At right is the basement of one of these gas heated homes**



**At the left is the gas heating and laundry equipment**

June 20. The price of the home, equipped with gas boiler, range, and water heater, is $8,990. The houses have solid brick walls, nine inches thick, and are lined with insulating material. Gas consumption for the heating season will be approximately 250,000 cu. ft.

The question of how much will it cost usually is asked by the prospective customer. He has heard that gas heating is expensive, and usually he is in the state of mind in which he honestly believes that all this luxury must be out of his economic reach.

Our experience in New York has been that people will pay more for automatic gas heating than they will for any other form of heating. But they will not, and cannot, for that matter, pay a great deal more. They can't afford to.

The Consolidated Gas Company of New York has had a special gas heating rate for some time. The following letter, which is posted in all of the houses in the three gas heated developments previously mentioned, touches upon the cost in a general way:

"The selection of Automatic Gas Heating for this house, and all others in this attractive development, indicates the practicability and economy of this modern, automatic fuel. It is the result of actual experience gained from thousands of installations in the metropolitan area.

"Automatic Gas Heat, supplied by the Gas Boiler, offers the equivalent of apartment hotel service in your own home. The heating equipment requires *no* attention.

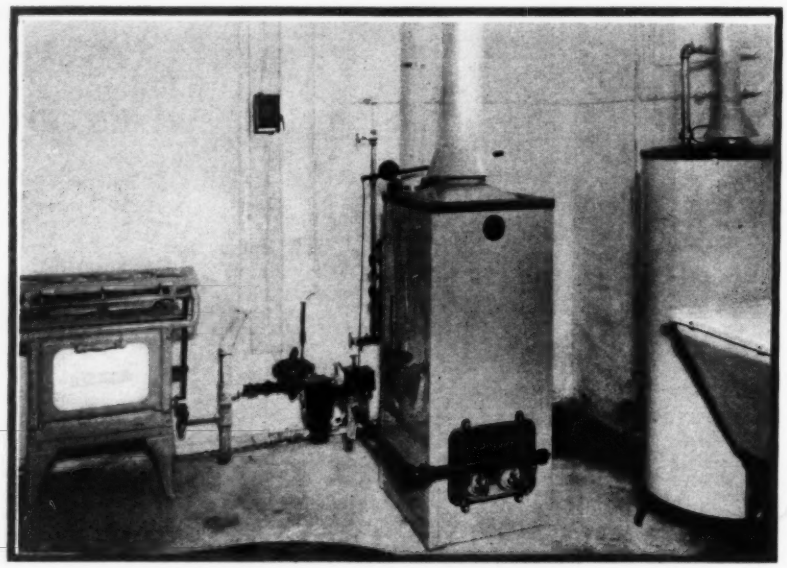
"Gas Heating in these homes is completely automatic. The temperature of your home will always be exactly as

## Gas Consumption Estimated for Each Home

*Operating costs for the heating of the houses in this project were based on figures covering average winter temperatures for several years. The experience gained in supplying gas in this particular locality indicated that approximately 1,200 cu. ft. of gas per square foot of direct cast-iron steam radiation would be required to adequately heat the buildings in question. In one of the sections of the development, the radiation installed to heat each home to 70 deg. Fahr. with the outside temperature at zero deg. Fahr. amounted to 270 sq. ft. of direct cast iron steam radiation or its equivalent.*

*Accordingly, the gas consumption for the heating season was estimated to be 325,000 cu. ft. for each house.*

AUTOMATIC HEAT SECTION



**Here is another view of one of the basements of the gas heated homes, showing the water heater at the right, the heating boiler in the center and a gas plate for laundry purposes at the left**

you wish it. You 'fix the fire' by setting the thermostat on the living room wall! Because of this automatic control, and the quick response of the system, it is possible to effect considerable savings by lowering the temperature of the house when it is unoccupied or during the night when the family is asleep. With no attention on your part, the house will be comfortably warm again at rising time or at any hour you choose.

"The reduced gas rate for heating also includes the gas used for other purposes in the home, making it possible for you to save in cooking, refrigeration, and water heating also. Should other gas appliances be used, such as a fireplace heater, incinerator, or laundry equipment, the saving would be greater.

"A letter describing the gas heating rate and a carefully prepared estimate of the annual fuel requirements will be sent to all purchasers of these homes."

Our experience shows quite definitely that the public wants this type of heating, and is willing to pay something extra for it. Cities and towns in which there is a favorable gas heating rate should witness an extensive adoption of this effortless heating service. Certainly all heating and plumbing contractors should give it due consideration.

On every hand we can see signs of definite trends in architecture, home equipment, and living standards. A non-automatic heating plant that is a source of worry and care, is entirely out of harmony with the modern home. People are learning to expect automatic services in every field and the contractor who can offer such a service is fortunate indeed.

The heating contractor who serves a section where there is a favorable gas rate for heating is in a position to increase his business materially. He can offer his customers what they want!

**Table 1—Selection Factors for Gas Boilers**

| Equivalent Cast Iron Steam Radiation (Square Feet of 240 Btu Each) | Selection Factor (Per Cent) |
|---|---|
| 500 | 56.0 |
| 800 | 54.0 |
| 1,200 | 51.0 |
| 1,600 | 48.0 |
| 2,000 | 45.0 |
| 3,000 | 42.5 |
| 4,000 and over | 40.0 |

In regard to the selection of gas boilers and the increase in load which must be provided for in starting with a cold system, it is interesting to note what the 1932 Guide of the American Society of Heating and Ventilating Engineers has to say on the subject.

### SELECTION OF GAS BOILERS

While gas-burning equipment can be and usually is so installed as to be completely automatic, maintaining the temperature of rooms at a pre-determined and set figure, there are in use installations which are manually controlled. Under such control the temperature variations are considerable because the human body does not react as readily to temperature changes as does a thermostat, and a greater boiler output is required quickly to regain comfortable temperatures. Experience has shown that in order to effectively overcome the starting load and losses in piping, a manually-controlled gas boiler should have an output as much as 100 per cent greater than the equivalent standard cast-iron column radiation which it is expected to serve.

Boilers under thermostatic control, however, are not

subject to such severe pick-up or starting loads. Consequently, it is possible to use much lower selection or safety factors. A gas-fired boiler under thermostatic control is so sensitive to variations in room temperatures, pressure of steam, or temperature of water, that in most cases a factor of 25 per cent is eminently sufficient for pick-up load.

The factor to be allowed for loss of heat from piping, however, must vary somewhat, the proportionate amount of piping installed being considerably greater for small installations than for large ones. Consequently, a selection factor for thermostatically controlled boilers must be variable. Table 1 gives selection factors to be added to the installed steam radiation under thermostatic control. They have been established by experience and are recommended by the American Gas Association.

### RATINGS FOR GAS HEATING APPLIANCES

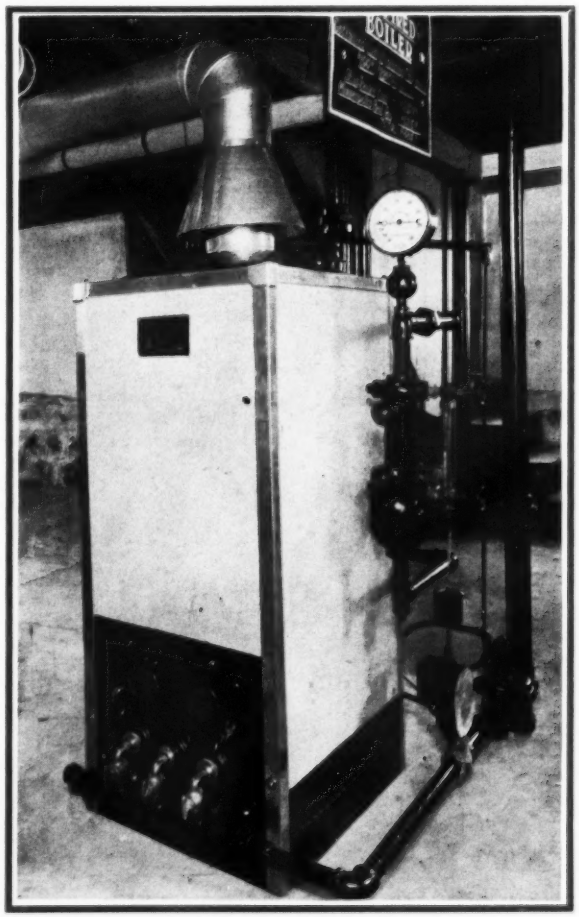
Since a gas appliance has a heat-generating capacity that can be predicted accurately to within 1 or 2 per cent, and since this capacity is not affected by such things as condition of fuel bed and soot accumulation, makers of these appliances have an opportunity to rate their product in exact terms. Consequently all makers give their product an hourly Btu. output rating. This is the amount of heat that is available at the outlet of a boiler in the form of steam or hot water. The output rating is in turn based upon the Btu. input rating which has been approved by the American Gas Association Testing Laboratory and upon an arbitrary efficiency which has been assigned by that Association.

In the case of boilers, the rating can be put in terms of square feet of equivalent direct radiation by dividing it by 240 for steam, and 150 for water. This gives what is called the American Gas Association rating, and is the manner in which all appliances approved by the American Gas Association Laboratory are rated. To use these ratings it is only necessary to increase the calculated heat loss or the equivalent direct radiation load by an appropriate amount for starting and piping, and to select the proper boiler.

It might be stated at this point that the rating given by the American Gas Association Laboratory is not only a safe rating when considered from the standpoint of capacity, but is also a safe rating when considered from the standpoint of physical safety to the owner or caretaker. The rating that is placed upon an appliance is limited by the amount of gas that can be burned without the production of harmful amounts of carbon monoxide.

### CONTROL FEATURES

One feature of the piping installation that adds to the satisfactory service rendered by gas boilers is provision for adequate and rapid venting of the air from steam heating systems. If air leaks into the steam distribution system during the period that the gas is turned off, and then vents out slowly when the thermostat calls for heat, the result will be a further cooling of the premises between the time that the thermostat calls for heat and the time that steam reaches the radiators. A freely venting steam or vapor system gives maximum economy and minimum temperature variation. When gas boilers are attached to existing heating plants, it is good practice to check the effectiveness of the venting provisions and if necessary, correct them so as to prevent the return of air into the heating system.




*"A gas fired boiler under thermostatic control is so sensitive to variations in room temperatures, pressure of steam, or temperature of water, that in most cases a factor of 25 per cent is sufficient for the pick-up load*

# *Home Owners want you to* Stop Shovel Drudgery *for them!*

THIS CONSTANT "nursing" of heating plants, watching over a fire in the early hours of the morning, wondering whether the fire will last all day or whether the housewife will allow it to go out or put it out with inefficient attention — these are a few of the inconveniences of hand fired heating plants that home owners want you to end for them.

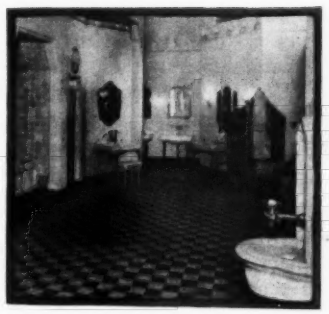
They want to have the assurance of even, comfortable, economical heat. In a word, they want automatic heat: oil burners, stokers or gas heat and their accessories.

They want *you* to sell these things to them because they know they can depend upon your experience as a heating man and your responsibility as a business man to select, sell, install and keep sold some automatic heat device that will meet their individual needs.

AUTOMATIC HEAT in the pages of Domestic Engineering will keep you informed on every important merchandising, technical and financing development in this phase of your work.

We solicit your further inquiries on any automatic heat question.

AUTOMATIC HEAT
*in*
*Domestic Engineering*
1900 Prairie Avenue ✦ ✦ Chicago, Ill.



# Supply News

## *For Manufacturers, Wholesalers, Salesmen*

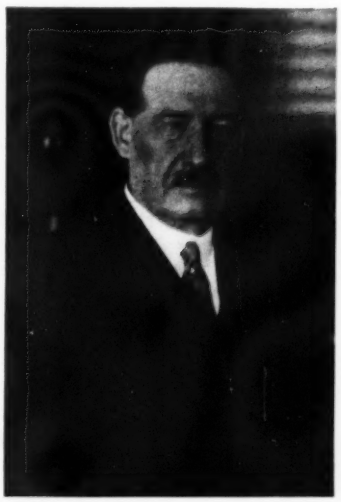
## CRANE CO. REPORTS FIRST LOSS BUT SEES PICK-UP IN BUSINESS

"In our opinion, the country has touched the bottom of the depression and we may anticipate in the near future a slow, steady ascent to a sound business level," said J. B. Berryman, president of Crane Co., Chicago, in his annual report to stockholders. "There is banking up a potential demand for housing which must eventually be met, and in general industry reserves are exhausted and a rise in the operating ratio will necessitate the purchase of large quantities of material in our line. A very moderate increase in demand will put us on the right side."

Crane Co. experienced a loss from operations in 1931 for the first time since the company was incorporated in 1865. The company, however, maintained a strong financial position and improved the ratio of current assets to current liabilities in 1931, the annual report reveals.

The yearly statement showed an operating loss of $6,149,329 for 1931 and a net loss of $7,985,329, which includes $1,836,000 charged for shrinkage in the value of inventories. This compares with a net profit in the preceding year of $2,734,405, equivalent after preferred dividends to 71 cents a share on 2,392,389 shares of $25 par common stock outstanding.

The company also charged a loss of $1,222,901 for loss in foreign exchange and other adjustments which increased the total net loss to $9,208,230.



J. B. Berryman

Mr. Berryman, in his report to stockholders, said that several causes contributed to the unprofitable operations. "The first and most important was the falling off in sales, due to the decline in building construction and curtailing of buying by railroads, oil companies, utilities, and industrial companies generally. The second was decline in the value of nearly everything purchased during the year. The third was a recession in gross profits brought about as is customary in times of stress, by manufacturers and dealers trying to force sales in a sterile market."

The consolidated balance sheet as of Dec. 31 shows current assets of $44,157,724, against current liabilities of $4,299,832.

## MANUFACTURERS SEE MENACE IN HIGH GOVERNMENT COSTS

A warning that public expenditures have assumed the proportions of a national menace and that unless they are controlled the country will drift into socialism was sounded by the Midwest Manufacturers' Association, at a recent meeting in Chicago.

Walter J. Kohler, president of Kohler Co., Kohler, Wis., was chairman of the meeting, the purpose of which was to organize a drive against the rising cost of government and excessive taxation. As a first step in its program, the association adopted an outline of policy together with resolutions setting forth its goal.

"Public expenditures for all forms of government, national, state and local, have assumed

Walter J. Kohler

the proportions of a national menace," the manufacturers stated. "The most authoritative information discloses that with American income declining from about 85 billion dollars in 1929 to probably 65 billion dollars in 1931, all forms of governmental expenditure have risen during the same period from about twelve and a half billion dollars to 14 billion dollars.

"Of this vast sum one-third represents federal expenditures and two-thirds the expense of state and local governments, and this is not stationary, but is increasing at the rate of 800 million dollars a year. That means that one-fifth of the value of the services and production of our people is turned over to the government, leaving that much less to be saved or spent by the individual himself.

"The situation has become so critical that we must either control this tendency or the United States becomes a Socialist government in substance, whatever its form."

As a cure for the situation the association recommends:

1—"Drastic reduction of federal expenditures and stern resistance to new appropriations as the first steps in the balancing of the national budget.

2—"It urges upon each state organization co-operation in applying the same policy to state and local expenditures.

3—"The endeavor to create among our citizens a tax consciousness which will cause them to realize the economic consequences of declining income absorbed to an increasing degree by the government through rising public expenditures.

4—"We recommend a re-examination of the functions and limitations of government and the methods of administering public funds and incurring public indebtedness for the purpose of restoring our governments to their true function and eliminating many extravagant activities and others which are steadily bringing it into competition with private citizens."

The association further recommended in substance that Congress broaden the base of income taxation and that taxes should be spread over a wide variety of activities.

### J. D. JOHNSON CO. ELECTS OFFICERS

J. D. Johnson Co., Inc., New York City, has elected the following officers for the year 1932: T. A. Johnson, president; F. O. Granson, vice president; W. C. Hallett, second vice president; B. H. Deacon, Jr., secretary, and Joseph Deacon, treasurer. The board of directors is composed of the above mentioned officers, and, in addition, J. D. Johnson, R. D. Elder and G. H. Cornell.

The following committee chairmen were also elected: Finance committee, F. O. Granson; real estate committee, W. C. Hallett; insurance committee, B. H. Deacon, Jr.; purchasing committee, T. A. Johnson.

### NOW IN ENGINEERING BUILDING

Mueller Co. of Decatur, Ill., has moved its offices in Chicago from 333 North Michigan Avenue, to Room 212A in Engineering Building, 205 West Wacker Drive. R. L. Jolly is in charge of the gas and water works division, and R. D. Fallon is in charge of the plumbing division of the Chicago offices.

### CRANE CO. SELLS DES MOINES, IA., BRANCH

Crane Co., Chicago, has sold its branch at Des Moines, Ia., to the L. H. Kurtz Co., plumbing and heating wholesale firm of that city. The L. H. Kurtz Co. will handle the Crane Company's line in the territory formerly served by Crane Co.'s Des Moines branch.

### WILL MOVE ELKHART, IND., PLANT

Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., will move manufacturing units of the Time-O-Stat Control Co., Elkhart, Ind., which it acquired about a year ago, from Elkhart to Minneapolis. The move will be made to effect economies, according to H. W. Sweatt, vice president.

### WHOLESALER ENLARGES QUARTERS

Futty & Co., Inc., plumbing and heating wholesale firm of Greenwich, Conn., has awarded the contract for construction of a new addition to its quarters to cost $20,000. The building will be of brick and steel construction, 35 x 100 ft., 1 story high.

### SARCO CO., INC., ENTERS BRITISH MARKET

Sarco Company, Inc., New York City, has incorporated a new company, the Spirax Mfg. Co., Ltd., in London, England, for the manufacture of the company's line of steam traps and specialties for the British market.

### THE MURDOCK MFG. & SUPPLY CO. APPOINTS REPRESENTATIVE

The Murdock Mfg. & Supply Co., Cincinnati, Ohio, closet manufacturer, has appointed B. W. Smith as its representative in Nebraska, North Dakota, South Dakota and adjacent territory. Mr. Smith will be located in Hastings, Nebr., and will call on the trade and architects in the territory.

### OPEN JOINT OFFICE IN TULSA, OKLA

The Neilan Co., Ltd. (Division of Mason Co.) and the Mason Regulator Co. have announced the establishment of a joint branch office at 409 East Archer street, Tulsa, Okla. Gordon Thomason is in charge.

### ESTABLISHES DIRECT FACTORY BRANCH IN BOSTON

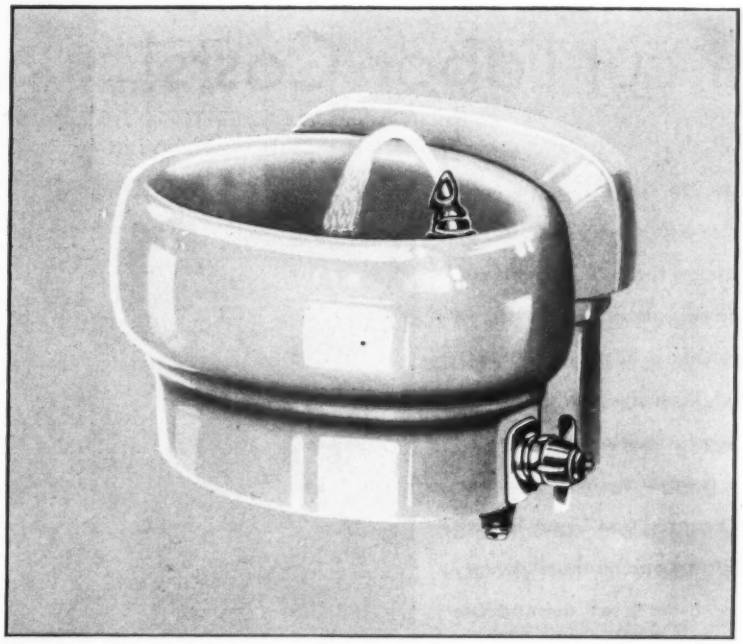
Gilbert & Barker Mfg. Co., Springfield, Mass., has established a direct factory branch at 66 Brookline avenue, Boston, for distribution of its products in Southern New Hampshire, Eastern Massachusetts and Rhode Island. This establishment will be known as the Eastern New England Division, and will be in charge of E. R. Walsh, Jr., formerly president of the J. J. Tyrrell Co., Inc., Boston.

### APPOINTED BARBER-COLMAN CO. DISTRIBUTOR

The Brown Tool Co., Cleveland, Ohio, has been appointed distributor for the Barber-Colman Co., Rockford, Ill., in the counties north of and including Paulding, Putnam, Hancock, Wyandot, Crawford, Richland, Ashland, Wayne, Stark and Mahoning, in Ohio. R. K. Rothrock, New Orleans, La., has been appointed distributor in Louisiana and Mississippi.

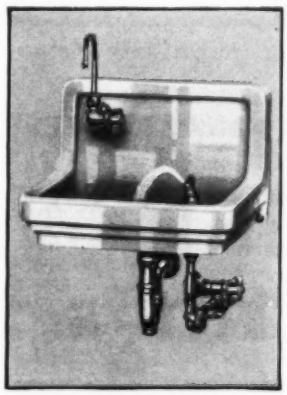
# "Standard"

## VITREOUS CHINA DRINKING FOUNTAINS



• TORIC—F-629 D •

• FLORIC—F-632 •



• SANIC—F-637 D •

DEPENDABLE, easy-operating "Standard" Angle Stream Drinking Fountains combine beauty, efficiency and sanitation. Constructed of genuine vitreous china with round contours, they are well proportioned to provide the most sanitary and easily cleaned surfaces.

The approved slanting water stream is automatically controlled so it cannot vary appreciably even when the pressure varies from 10 to 100 lbs. This assures always a steady water supply falling clear of fountain head, without the annoyance of unexpected splashing from an unruly stream.

"Standard" Angle Stream Drinking Fountains comply with the most rigid plumbing codes and meet every sanitary requirement. They safeguard the user against contamination, prevent wasting water and provide an even stream of drinking water.

Specify one of the "Standard" Angle Stream Drinking Fountains on your next installation.

"Standard" PLUMBING FIXTURES

**Standard Sanitary Mfg. Co.**

PITTSBURGH, PA.

Division of AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

# FASTER UNIONS

## Precision Threads that cut Labor Costs!

LABOR-SAVING speed is built into every Square "Gee" Union. Precision threads . . . clean cut, right in pitch, smoothly chamfered . . . take hold in a hurry, "go home" equally fast. Exclusive manufacturing processes, plus triple inspection of every part, is your assurance of that. Make the Square "Gee" your buying guide on fittings and hangers of every type. It is a mark of dependable uniformity always; a mark that insures better work at lower labor costs.

**THE GRABLER MFG. COMPANY**
6565 BROADWAY · CLEVELAND, OHIO
Warehouses:
New York, Chicago, Los Angeles, San Francisco

**THE SQUARE "GEE" LINE INCLUDES:**
Standard and Extra Heavy Malleable Fittings . . . Standard and Ground Joint Unions . . . Rail Fittings . . . Standard Cast Iron Steam Fittings . . . Standard and Patented Cast Iron Drainage Fittings . . . Standard and Extra Heavy Brass Fittings . . . Brass Unions . . . Steel and Brass Nipples . . . Hangers . . . Floor and Ceiling Plates.

YOUR FITTING PROBLEM IS SOLVED WHEN YOU SAY SQUARE "GEES"

**SQUARE Pipe** **"GEE" Fittings**

MALLEABLE, CAST IRON DRAINAGE, BRASS

### OPENS DISPLAY ROOM IN BOSTON, MASS.

The Spencer Heater Co., Williamsport, Pa., has established display rooms and offices at 96 Brookline avenue, Boston, Mass. E. A. MacDonald is manager of the branch.

### MOVES PHILADELPHIA OFFICE

The Philadelphia office of the Semler Co., Jeannette, Pa., have been moved from Market Street National Bank building to 5623 Spruce street. This office is in charge of Frank Martin.

### MOTOR WHEEL CORPORATION ADDS TO FIELD STAFF

Motor Wheel Corporation, Heater Division, Lansing, Mich., has just placed three new men in three different territories to act as district representatives.

These men are D. S. Greer, J. M. Furnas and C. W. Sullivan. Mr. Greer will cover the state of Alabama. Mr. Furnas will be stationed in Washington, D. C., and will cover a sizable territory from that point, while Mr. Sullivan, with headquarters at Bradenton, Fla., will cover the states of Florida, Georgia and South Carolina as district manager.

### FOREIGN MANUFACTURER ESTABLISHES AMERICAN OFFICE

R. Fuess Inc., manufacturers of instruments for scientific research and industrial control, have established an American office at 245 West 55th street, New York City. The company's main office and works are located in Steglitz, a suburb of Berlin, Germany.

The company was founded in 1865 by Rudolph Fuess and in 1892 moved into its present headquarters at Steglitz, where there existed potentialities for adequate expansion. Paul Fuess, the son of the founder, is head of the company.

### PAYS ON PREFERRED STOCK

Chase Brass & Copper Co., Waterbury, Conn., has declared the regular quarterly dividend of $1.50 a share on its Series A 6 per cent preferred stock, payable March 31 to stock of record March 21.

### MAINTAINS DIVIDEND ON COMMON STOCK

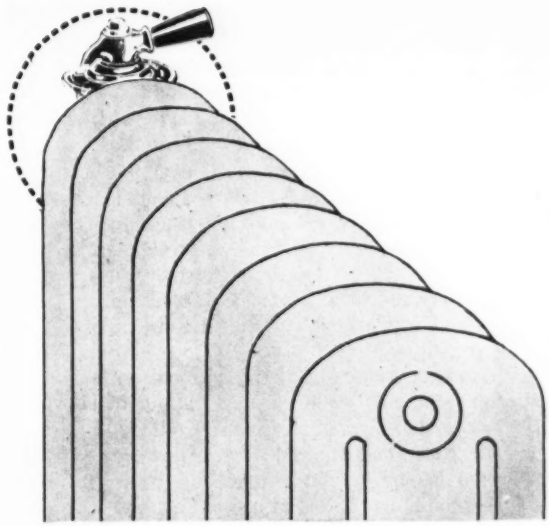
Scovill Mfg. Co., Waterbury, Conn., has declared the regular quarterly dividend of 50 cents a share on its common stock, payable April 1 to stock of record March 16.

### U. S. RADIATOR CORP. REPORTS LOSS

The United States Radiator Corp., Detroit, Mich., and subsidiaries, had a net loss for 1931 of $1,289,482, after depreciation, amortization, interest, etc., compared with a net loss of $641,973 for 1930.

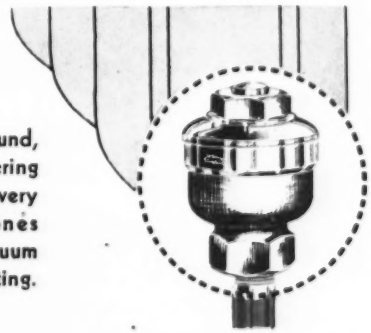
### MOTOR WHEEL CORP. REPORTS FOR 1931

Motor Wheel Corp., Detroit, Mich., reports for year ended Dec. 31 net loss of $572,311 after all charges, comparing with net income of $986,751 in 1930. Of the loss reported for last year, $131,578 represents Motor Wheel's share of the loss of Cleveland Welding Co., in which it has a controlling interest.

Every B. & J. trap and valve, before shipment from the factory, is made to operate under conditions worse than it can ever encounter in actual service. That's your guarantee that Barnes & Jones Vapor and Vacuum Systems of Heating will stand up—our guarantee that, once tried, you will always specify B. & J.

30 years of sound, practical engineering are back of every Barnes and Jones Vapor and Vacuum Systems of Heating.



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Send, without obligation, your book describing Barnes & Jones Vapor and Vacuum Systems of Heating.
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Company.....
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City.....
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### A. S. S. E. JOINS STANDARDS ASSOCIATION

The American Society of Sanitary Engineering has become a member-body of the American Standards Association with A. R. McGonegal, plumbing inspection division, engineering department, Government of the District of Columbia, Washington, D. C., as its representative on the A. S. A. standards council.

Thomas M. Dugan, McKeesport, Pa., is president of the American Society of Sanitary Engineering; James R. Walker, Waterbury, Conn., is secretary; and Jere F. Dowd, Cincinnati, Ohio, is treasurer.

The American Society of Sanitary Engineering believes in and is working for the attainment of the following principles:

1. Gradual perfection of the national plumbing code. 2. Better plumbing codes locally where standards are now below the present National Code. 3. Plumbing codes in states, cities, and towns now without their undoubted benefit. 4. Adequate and universal inspection of plumbing. 5. Purification of water supplies. 6. Elimination of stream pollution. 7. Safe sewage disposal. 8. Standarization of plumbing material and practices. 9. Education in the fundamental laws of sanitation. 10. Experiment and investigation of all phases of sanitation. 11. Publication and distribution of reports and other educational matter.

### DEATH OF FRANK S. JACKSON

Frank S. Jackson, sales engineer at Bethlehem, Pa., for Bethlehem Steel Co., died recently, in his 38th year. He had been with the Bethlehem Company since 1914.

# Business Personals

GEORGE L. DOHERTY was elected president of the Doherty-Brehm Co., Minneapolis, Minn., on March 4, to fill the vacancy caused by the resignation of E. W. BREHM. Mr. Doherty was formerly vice president of the company. Besides directing the company's affairs, he will continue in active charge of engineering activities.

C. R. HAMMER has been elected a director of the McCord Radiator & Mfg. Co., Detroit, succeeding W. C. Winter, resigned. L. M. HAMLIN has been elected treasurer to succeed Mr. Hammer in the latter position.

J. M. MCDONALD, JR., who has been manager of the Minneapolis, Minn., branch of the A. Y. McDonald Mfg. Co. for the past several years, has been transferred to the company's home office in Dubuque, Ia., where he has assumed an executive position. L. C. NORTON succeeds Mr. McDonald as manager of the Minneapolis branch. He was previously assistant manager of the company's Omaha branch and later manager of the Lincoln branch.

J. J. MURPHY, who has been associated with the Central Foundry Co. for the past thirty-two years and since 1924 manager of that company's Chicago sales office, has severed his connections with the company. WILLIAM C. GROENIGER, JR., formerly manager of the Central Foundry Company's warehouse in St. Louis, Mo., has been appointed to succeed Mr. Murphy as manager of the Chicago office. Mr. Murphy has spent his entire business career in the soil pipe industry and


# Kennedy Malleable-Iron Pipe Fittings

## *annealed for 200 hours*

YOU can be sure of true malleability of Kennedy Fittings because they are annealed for 200 hours—over 8 days—in pyrometer-controlled ovens. This long-continued process is so thorough that Kennedy Malleable Iron Fittings can be crushed almost flat without cracking. Your pipe fitters and machinists will find that Kennedy Fittings go on the pipe easily and make tight joints quickly, for they are strong and accurately machined, as well as being truly malleable.

*Send for the Kennedy Catalog*

**The Kennedy Valve Mfg. Co., Elmira, N. Y.**

*Warehouses and Representatives in Principal Cities*

**KENNEDY**

**VALVES-PIPE FITTINGS-FIRE HYDRANTS**

not only is he an authority on matters relating to soil pipe, but to the entire plumbing industry as well. As a result of the many years he has spent in the industry, Mr. Murphy has a wide acquaintanceship among plumbing and heating wholesalers in the Central West. He first became associated with Central Foundry Co. in 1900 as shipping clerk in the Chicago warehouse. Later he was made manager of the warehouse and then in 1924 was transferred to the firm's sales office, in the McCormick building, as manager.

WILLIAM RAASCH, president of the American Gas Products Co., which was recently purchased by the American Radiator Co., has just completed a business trip through the Pacific Coast territory.

E. H. BLYWISE, president of the Republic Brass Co., Cleveland, Ohio, recently made a business trip to Seattle, Wash., and other Pacific Northwest cities.

EVERETT S. BUCK, who has been associated with the General Iron Works Co., Cincinnati, Ohio, in the development of air conditioning equipment following a number of years in the consulting field, has re-established his consulting practice at 55 Sheehan avenue, Cincinnati, where he will specialize in a manufacturer service in the design and testing of air conditioning equipment as well as market analysis and business organization.

J. C. LEACH has been named manager of the Birmingham, Ala., office of the United States Sanitary Specialties Corp. of Chicago, Ill.

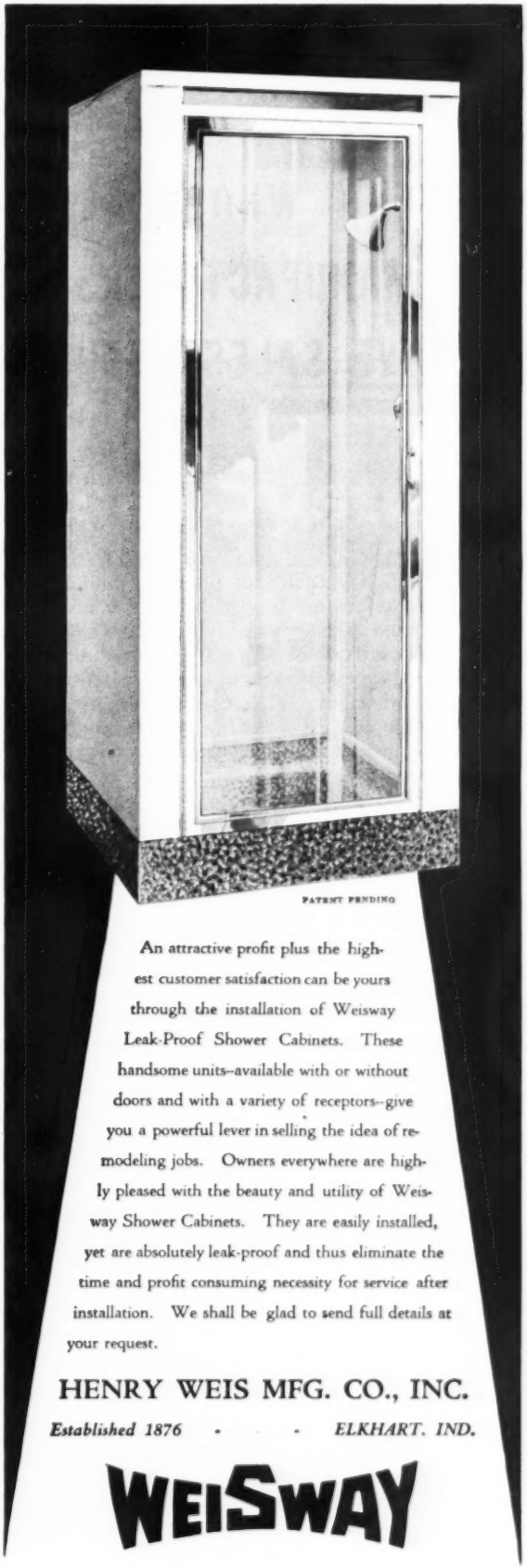
HAROLD SMITH, vice president of the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., has been elected a director of the Radio Corp. of America.

C. H. CROCKER, comptroller, Worthington Pump and Machinery Corp., Harrison, N. J., has been elected vice president in charge of a newly organized unit called the Comptrollers' Division of the American Management Association.

H. R. AUDET has been appointed Michigan manager for the Greenfield Tap & Die Corp., Greenfield, Mass. The area is under the direct supervision of C. C. Ziegler, district manager of the Western territory. For the past six years, Mr. Audet has been division manager for the General Motors Export Co. The major portion of his business experience has been devoted to the manufacture and sale of precision screw thread cutting tool and gages.

G. FRED SHERMAN, formerly assistant sales manager of Tube-Turns, Inc., Louisville, Ky., was recently appointed manager of sales of the forged fittings division of Bonney Forge and Tool Works. He will be located at the general offices of the Bonney organization at Allentown, Pa. BEN BUSH and HOWARD F. GRIMES were recently appointed to the sales staff of the forged fittings division of the company. Mr. Bush will have charge of the selling in the New York and Pennsylvania district. Mr. Grimes will cover the Middle Western section of the country.

HAMILTON GARNSEY, JR., has been appointed works manager of Goulds Pumps, Inc., Seneca Falls, N. Y., succeeding T. I. S. BOAK, resigned. Mr. Garnsey joined the Goulds organization in 1923, and spent two years at general foundry work. In 1925, he was appointed foundry engineer and in 1929 he became assistant to the general manager. His appointment as works manager follows his recent designation as assistant to the president.


PATENT PENDING
An attractive profit plus the highest customer satisfaction can be yours through the installation of Weisway Leak-Proof Shower Cabinets. These handsome units--available with or without doors and with a variety of receptors--give you a powerful lever in selling the idea of remodeling jobs. Owners everywhere are highly pleased with the beauty and utility of Weisway Shower Cabinets. They are easily installed, yet are absolutely leak-proof and thus eliminate the time and profit consuming necessity for service after installation. We shall be glad to send full details at your request.
HENRY WEIS MFG. CO., INC.
Established 1876 - - ELKHART. IND.
WEISWAY

# EASTERN WHOLESALERS ASK MANUFACTURERS TO IMPROVE SALES METHODS

Thomas H. Powers

WHOLESALERS of plumbing and heating materials, meeting in New York on March 9 and 10 at the midwinter session of the Eastern Supply Association, insisted in several resolutions upon greater recognition as essential and economical distributors. A committee was authorized and appointed to work for greater co-operation between the wholesaler and manufacturer members of the association. Manufacturers were asked to appoint promptly a similar committee.

These resolutions point out that it is a detriment for manufacturers to sell to other than wholesalers; that settlements at less than the full amount of the indebtedness create unfair competition; that unwarranted extension of credit to newly organized companies is unfairly competitive; that the wholesaler acting individually should in every legal way possible support the manufacturer who protects him; that warehouses maintained by manufacturers and manufacturers' agents are detrimental; that manufacturers should discontinue or modify the practice of selling indiscriminately to so-called wholesalers regardless of financial responsibility.

In another resolution, the Eastern Supply Association approved the merchandising plan recommended to the industry by the officers of the National Association of Master Plumbers (this plan was published fully in DOMESTIC ENGINEERING, November 14, 1931, page 34).

Speakers at the meeting discussed credits, composition settlements, anti-trust laws, and the influence of the Reconstruction Finance Corporation. Leaders in different branches of the industry reported on conditions in the various fields served by their companies.

The resolutions, presented by Claude W. Owen of E. G. Schafer & Co., Washington, D. C., follow:

RESOLVED, That it is the sense of this Association that the sale by manufacturers and/or manufacturers' agents of their products to concerns other than wholesalers of plumbing and heating supplies is a detriment to the industry; and

BE IT FURTHER RESOLVED, That settlements at less than the full amount of the indebtedness made by manufacturers and/or manufacturers' agents with wholesalers of plumbing and heating supplies, either within or outside of bankruptcy, thereby resulting in the acquisition of merchandise by such wholesalers at less than market prices, creates unfair competition with the other wholesalers and is damaging to the industry; and

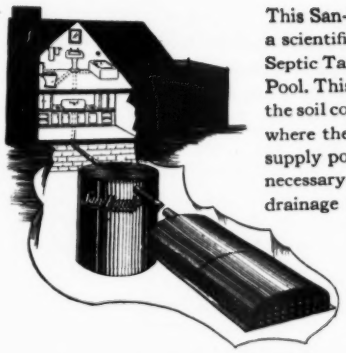
BE IT FURTHER RESOLVED, That the unwarranted extension of credit by manufacturers and/or manufacturers' agents to concerns newly organized for the purpose of engaging in business as wholesalers of plumbing and heating supplies, and others, beyond the limits justified by the financial statements of such concerns, results inevitably in the sacrificial sale by such concerns of the merchandise supplied by such manufacturers and/or manufacturers' agents, thereby creating unfair competition with other wholesalers and is a menace to the industry; and

BE IT FURTHER AND FINALLY RESOLVED, That the secretary of this association, now duly assembled in meeting, be and he hereby is instructed to send a copy of these resolutions to all manufacturers and wholesalers, members of this association, and to their accredited representatives, to the end that they may take steps to correct such abuses.

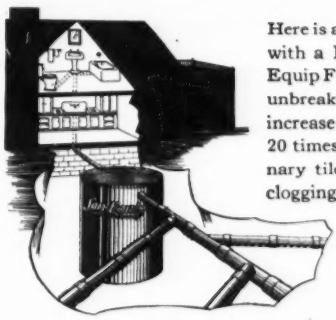
### AUTHORIZE TRADE RELATIONS COMMITTEE

RESOLVED, That we recommend to the association that a Trade Relations Committee be appointed for the purpose of bringing about a greater degree of co-operation between the manufacturer and wholesaler members of this association, and that the president be authorized and empowered to appoint such a committee.

The Eastern Supply Association hereby resolves that warehouses maintained by manufacturers and manufacturers' agents in various parts of the coun-



This San-Equip System consists of a scientifically designed San-Equip Septic Tank and a San-Equip Drain Pool. This is an ideal system where the soil conditions are favorable and where there is no danger of water supply pollution. The Pool provides necessary storage capacity and drainage area, is easily installed, saves labor and materials, and has many advantages over home built pools.



Here is a San-Equip Septic Tank with a Drainage Field of San-Equip Filter Pipe. An improved, unbreakable pipe, perforated to increase the drainage area 12 to 20 times per foot over the ordinary tile. Tight joints prevent clogging and preserve alignment. Lays quicker with no breakage. Fittings permit a varied layout.

# Sell a Complete Disposal System

## It's the most important part of the un-sewered job

DON'T expect the plumbing job to be successful unless you have provided the proper sewage disposal. For if the disposal system fails to work, the rest of the plumbing is useless.

That is why it is important that you sell a complete sewage system both tank and drainage.

By the sale of a complete QUALITY system you gain in these three ways:

1 *Increased profits from both tank and drainage field.*

2. *Easier to sell quality fixtures throughout the entire job.*

3. *Good will that brings you new customers.*

You can recommend San-Equip Systems with confidence. San-Equip is the largest producer of septic tanks. San-Equip is the only nationally advertised, trade-marked system. San-Equip supplies an adequate field service to help you with your problems. And San-Equip has been approved by leading health officers everywhere. In fact, San-Equip's leadership in this field is so firmly established that over 50% of the sewage disposal systems installed by leading plumbers in the United States bear the San-Equip Trade Mark.

Get the full facts about San-Equip today. Mail the coupon for a complete description of the line and for facts about the big suburban market that is open to you. No cut-throat competition to worry about. And extra profits to reward you.

## San-Equip ★Certified SEWAGE DISPOSAL

★A Certificate of Approved Equipment backed by the largest manufacturers of home disposal systems accompanies every San-Equip System as a permanent record of the Installation.

**MAIL THE COUPON FOR COMPLETE FACTS**

THE SAN-EQUIP CO.,
723 BRIGHTON AVE.,
SYRACUSE, N. Y.

Please send me full details about San-Equip Sewage Disposal Systems, and your plans for getting more business and increased profits from the suburban market.

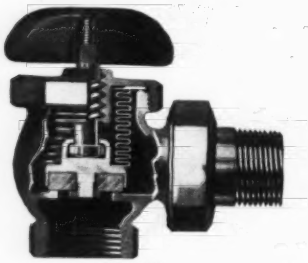
*Name*.....

*Address*.....

*City*.....

*State*.....

CAPITOL



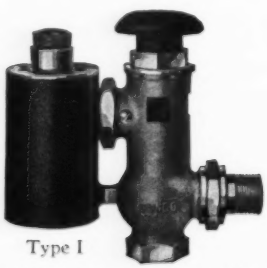
No. 99
Bellows Packless Valve

THE Capitol Bellows Type Packless Valve illustrated above is designed and manufactured to meet in the most minute detail all of the requirements of such products.

The Capitol Bellows Type Packless Valve cannot leak, bind or stick. One smooth, easy turn opens or closes the valve.

Capitol Packless Valves are made of the highest grade steam brass, rough nickel finish and highly polished trimmings. Can be furnished with lock and shield or wheel handles. Handles constructed of heat resisting composition, and finished in black with highly polished surface.

THE CONCO Temperature Control Valve is a graduated Packless Supply Valve having a temperature control unit that automatically controls room temperatures within a maximum range of 2°. For use on two-pipe heating systems. Installed like an ordinary radiator valve. Can be used to replace practically any type of radiator valve without changing pipe work. CONCO Valves have established an enviable record for accurate, uniform and dependable control of room temperatures.



Type I
Conco Temperature Control Valve

Bohn Aluminum & Brass Corporation
CAPITOL BRASS DIVISION
MANUFACTURERS OF BRASS VALVES, BOILER TRIMMINGS AND PLUMBERS' BRASS GOODS
DETROIT-MICHIGAN

try are detrimental, not only to the wholesaler, but also to the best interests of the industry, and we wholesalers at this conference call upon the manufacturers to either discontinue or modify the practice of selling indiscriminately to all so-called wholesalers irrespective of their financial responsibility.

We further suggest that a committee be appointed by the manufacturers to meet the newly appointed trade relations committee of the Eastern Supply Association to discuss this problem with a view of arriving at a solution.

RESOLVED, That in our judgment the wholesaler, acting individually, should in every legal way possible support the manufacturer who protects him.

RESOLVED, That we recommend that the manufacturers who have not as yet granted the 5 per cent cash discount, consider the advisability of such action.

FURTHER RESOLVED, That we recommend to those manufacturers who are now extending a 5 per cent cash discount, that settlements be made on the 10th of the month following delivery.

RESOLVED: That we approve the merchandising plan recommended to the industry by the officers and directors of the National Association of Master Plumbers.

In response to one of the above resolutions, President Powers immediately appointed the following trade relations committee:

*Upper New York State*

P. M. Beecher, Samuel Sloan & Co., Rochester, N. Y.

*Boroughs of Manhattan, Bronx, Westchester County, Northern New Jersey*

J. M. Chaplain, John Simmons Co., New York, N. Y.

*Brooklyn, N. Y., and Long Island*

Henry D. Gasner, Saltser & Weinsier, Inc., Brooklyn, N. Y.

*New England*

W. F. Bennett, Ideal Supply Co., Somerville, Mass.

*Philadelphia and vicinity*

W. A. Brecht, Hajoca Corp., Philadelphia, Pa.

*Washington and vicinity*

Claude W. Owen, E. G. Schafer Co., Inc., Washington, D. C. (Mr. Owen will be the Chairman of the Committee.)

*The South*

L. U. Noland, Noland & Co., Inc., Newport News, Va.

President Thomas Powers welcomed about four hundred members at the opening meeting. Several new members were received and introduced. They consisted of: The Central Plumbing Supply Co., Bridgeport, Conn.; W. H. Hussey & Son, New York City; J. F. Reber & Co., Lewisburg, Pa.; Manufacturers Selling Co., Trenton, N. J., and H. C. Weiskittel & Co., Inc., Baltimore, Md.

The first speaker to address the meeting was Thomas O. Sheckell, manager of the adjustment bureau of the New York Credit Men's Association. Mr. Sheckell urged the members assembled to make use of the bureau, citing many instances where recoveries last year had run as high as forty-four cents on the dollar instead of the usual twenty-five cents through composition settlements. In one instance, he pointed out, the co-operation of eleven creditors

showed up fraud and inadequate declaration in a bankruptcy case where four hundred dollars was listed as the entire assets against forty thousand dollars in accounts receivable. This offered settlement was broken up when it was shown that ten thousand dollars was nearer the correct amount that should have been offered, a receiver of the adjustment bureau was named and the creditors benefited greatly due to their co-operation.

James A. Emery, general counsel, National Association of Manufacturers, explained the meaning and origination of the anti-trust laws. This noted authority on anti-trust laws urged that the laws must be examined in the light of reason and also urged that interested parties carefully decide what it is they want to do and what it is they are really not allowed to do under the laws. He stated that trade associations have a definite place in the industrial program. Voluntary co-operation which does not endanger the public interests is not forbidden by law, so that associations have the right to distribute trade information provided it is properly done and does not fix prices or allocate territories. The law does not penalize all contracts in restraint of trade but does penalize those which directly destroy or are injurious to the public welfare. Common information and common conclusions resulting in uniform price is not *prima facie* evidence of malicious agreement for the restraint of trade.

In pointing out how the department of agriculture has time and again called for co-operation among the farmers and other interested parties to cut down surpluses by limiting production, he showed that industry might do the same thing by rational co-operation. In concluding, Mr. Emery advised that what trade needed was administrative and not judicial enforcement and that due to lack of faith in each other, industrialists have made "anti-trust" really more a state of mind than a state of law.

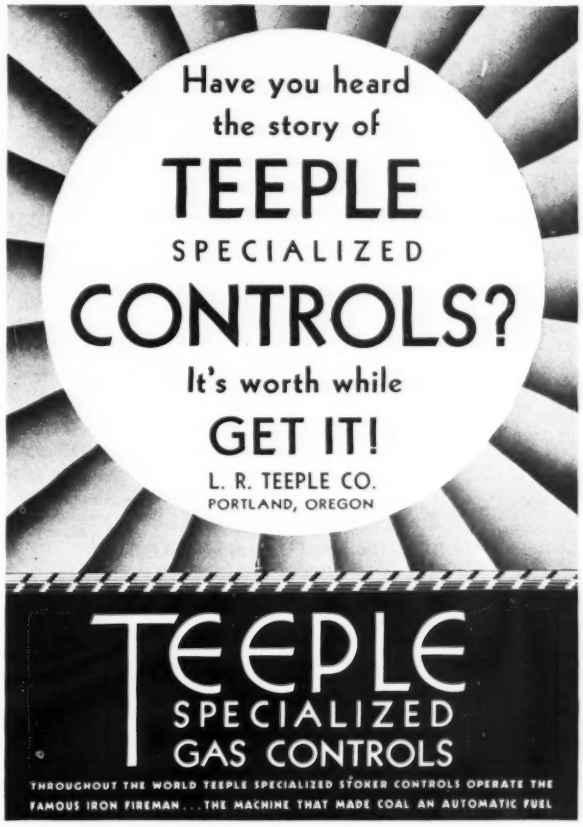
Representative James G. Strong of Kansas in his talk outlined the purposes and working plans of the Reconstruction Finance Corp. After his address, the meeting was adjourned for the goodfellowship luncheon.

In the afternoon the wholesalers sat in closed session and the adjournment of this meeting terminated the activities for the day.

### TELL OF BUSINESS CONDITIONS

At the opening of the Thursday morning session, several leaders of the industry commented briefly on business conditions and outlook. H. T. Richardson of the Richardson & Boynton Co. reviewed the boiler and radiator situation. Business in this branch of the field, he said, was poor, as everyone knew. He said that misunderstandings over policies were to a great extent responsible for many of the present day ills in these lines. He scored "chiseling" jobbers, particularly in the Metropolitan district, and said that "the chisels seemed to be getting sharper." "Only a definite effort on the part of the jobbers," he stated, "and the termination of chiseling will improve conditions."

Harry Speakman, of the Speakman Co., Wilmington, Del., talking on brass goods said that prices



were exceedingly bad in this field and that brass production was running only about thirty per cent. He pointed out that many manufacturers had cut their production costs to the minimum and at present were selling at cost. He urged an advance in prices and firmly pointed out that what the trade needed most was constructive instead of destructive effort.

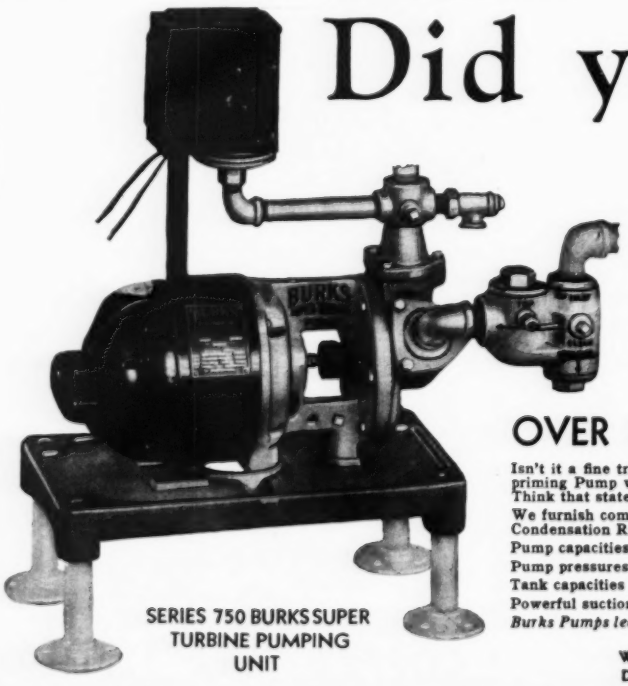
J. J. Hall, vice-president of the Standard Sanitary Mfg. Co., Pittsburgh, Pa., stated that enamelware last year was sixty per cent off. This he thought was in a great measure due to discord, misunderstanding and other influences that had a tendency to divert business away from the manufacturer who was selling only to the jobber. He stated that prices today are from 15 to 20 per cent lower than they were fifteen years ago. He assured the wholesalers that every endeavor would be made to help them so that they could meet all competition arising from the direct-to-you and other such sources.

### RESALE BASIS IS MAINTAINED

J. S. Mattimore, of the Walworth Mfg. Co., Boston, Mass., spoke on fittings. He said that the industry was off 60 per cent due largely to the decrease in building. In commenting on the fittings industry as a whole, he urged that pipe, valves and fittings continue to be on a 2 per cent cash discount basis. Briefly he sketched the progress that has been made since the resale program was instituted some six years ago. He stated that approximately 80 per cent of the fittings merchandised today are sold on a resale basis with a differential. The fitting industry, he said, was glad to make the distributor's profit possible, but he pointed out that in the Metropolitan district only about 25 per cent use the plan. It showed a healthy condition, he said, that fittings were sold to the distributor at 55 per cent off and advertised at 27 per cent off as the starting point for the resale. He urged a reconsideration of the resale program and felt confident that such a reconsideration would give the wholesaler his entitled profit.

W. A. Brecht of the Hajoca Corp., Philadelphia, Pa., gave some interesting figures on soil pipe. From 1910 to 1913, according to Mr. Brecht, the consumption of soil pipe was approximately 250,000 tons while the production capacity was 400,000 tons. At present, the consumption is approximately 133,000 tons against a production capacity of 700,000 tons.

J. J. Kennedy, vice president of the National Tube Co., Pittsburgh, Pa., reviewed the steady decline in the steel pipe industry since the last quarter of 1929. In spite of the fact that volume has almost disappeared, he stated that the resale conditions had been good, with the exception of a few spots here and there in the country. He also chided the Metropolitan district as being a bad market when he pointed out that it was one of the spots he had mentioned where resale conditions were not healthy. He went on to say that conditions in the pipe field were greatly affected by the tremendous number of people handling pipe, many of whom were not really qualified. He urged a continuance of the 2 per cent cash discount. G. Lynn Sumner, advertising counselor,


SERIES 750 BURKS SUPER TURBINE PUMPING UNIT

# Did you ever?

Did you ever hear of a Burks Super Turbine Pump *wearing out* in water system service? We never did either!

The *first* Burks turbine-type pump manufactured is still "swinging along" rendering 100% satisfactory service to its owner. How long will a Burks Pump last? *Frankly we don't know.* We *do know* that quite recently the owner of a Burks pump that has been in constant service for *more than 10 years* refused to exchange it for a new Burks Super Turbine! *Such loyalty and customer satisfaction* furnishes a firm foundation on which to build *your* pump business!

## OVER 30,000 IN DAILY SERVICE!

Isn't it a fine tribute to the lasting qualities of the Burks Super Turbine self-priming Pump when 99% of all Burks Pumps ever sold are in service today? Think that statement over!

We furnish complete pumping units (as illustrated), Complete Water Systems, Condensation Return Units, and accessories incident to such services.

Pump capacities to 1000 gallons per hour—

Pump pressures to 100 pounds per square inch—

Tank capacities to 2000 gallons—

Powerful suction lift equalled by no other pump—

*Burks Pumps lead the field* in Quality, Economy and Performance!

WE ARE IN POSITION TO FURNISH PUMPS TO DELIVER UP TO 12,000 GALLONS PER HOUR.

**DECATUR PUMP COMPANY** DECATUR, ILLINOIS.

addressed the meeting on "New Trends in Merchandising." Following his talk, J. L. Murphy and Morris Jarcho, plumbing contractors of New York City, were introduced and urged those present to exhibit at the convention of the National Association of Master Plumbers to be held in New York City next June. Mr. Murphy sketched briefly how the National Association of Master Plumbers through plumbing code activities, merchandising and in other ways had helped the manufacturers, and urged that they reciprocate by exhibiting at the convention.

Theodore Ahrens, Standard Sanitary Mfg. Co., assured these men that they would not find the manufacturers lax in co-operation.

## Heating in Residences and Small Structures

(Continued from Page 52)

on cold mornings should be the bedrooms and baths, and then, while the family was getting dressed and preparing for the morning meal, the other radiators would have a longer time to heat. In other words, it was desired to give the preference to the bedrooms and bath and there was no good way to do this except through the use of two loops. It will be seen that the two front bedrooms are the first two radiators supplied by the front loop and that the baths and rear bedrooms are the first radiators supplied by the rear loop outside the attic radiator which was on the top of a long riser; even here, however, the two attic bedrooms are liable to receive steam before the radiators on the ends of the loops such as in the kitchens, dining rooms and parlors. The kitchens have stoves to help out on cold mornings.

Scaling off the longest run, it is found to be about 75 ft., and, doubling this for the fittings, gives an equivalent run of about 150 ft. If the system had been put in with a single loop, the length of equivalent run would have been more and the time required to heat the farthest radiators would have been greater. The sizing of the piping will now be worked back from the farthest radiator to the boiler, taking the front loop first:

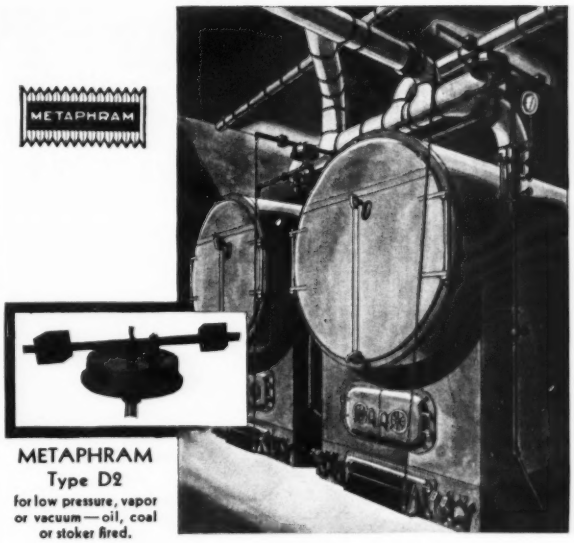
| Room | Radiation | Rad. on Riser | Riser Size | Rad. on Main | Main *Size A | Main **Size B |
|---|---|---|---|---|---|---|
| **Front Loop** | | | | | | |
| 1st Fl., Vest... | 12 | 12 | ¾ | 12 | 1 | ½ |
| Attic, Fl. B. R. | 24 | 24 | ¾ | .. | .. | .. |
| 2nd Fl., L. R... | 16 | 40 | 1 | .. | .. | .. |
| 2nd Fl., Par... | 40 | 80 | 1¼ | .. | .. | .. |
| 1st Fl., L. R... | 40 | 120 | 1½ | 132 | 1½ | 1½ |
| 1st Fl. Alcove. | 12 | 12 | ¾ | 144 | 1½ | 1½ |
| 1st Fl. Frt. Hll. | 24 | 24 | ¾ | 168 | 1½ | 1½ |
| 2nd Fl. Ft. B. R. | 20 | 20 | ¾ | .. | .. | .. |
| 1st Fl. Ft. B. R. | 16 | 36 | 1 | 204 | 2 | 2 |
| **Rear Loop** | | | | | | |
| 2nd Fl. Kitch.. | 32 | 32 | 1 | .. | .. | .. |
| 2nd Fl. D. R... | 28 | 60 | 1¼ | .. | .. | .. |
| 1st Fl. D. R... | 28 | 88 | 1¼ | .. | .. | .. |
| 1st Fl. Kitch.. | 28 | 116 | 1½ | 116 | 1¼ | 1½ |
| Rear Hall .... | 32 | 32 | 1 | 148 | 1½ | 1½ |
| 2nd Fl. R. B. R. | 24 | 24 | ¾ | .. | .. | .. |
| 2nd Fl. Bath... | 20 | 44 | 1 | .. | .. | .. |
| 1st Fl. R. B. R. | 24 | 68 | 1¼ | 216 | 2 | 2 |
| 1st Fl. Bath... | 20 | 20 | ¾ | 236 | 2 | 2 |
| Rr. Attic B. R. | 20 | 20 | ¾ | 256 | 2 | 2 |

* Main Sizes A are taken from Table XV, based on 1 oz. drop per 100 ft. of run or its equivalent.

** Main Sizes B are based on Table XVI, which is 1/9th of the sq. root of the radiation supplied.

The Riser Sizes are taken from Table XIII, for risers on the ordinary gravity one-pipe steam system.

It will be seen that the use of 1/9th of the square


METAPHRAM
Type D2
for low pressure, vapor or vacuum — oil, coal or stoker fired.

METAPHRAM Gradual Control
covers the entire range of domestic hot water and low pressure boilers and tank heaters, either gas, oil or coal fired.

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NATIONAL REGULATOR CO.
2317 KNOX AVENUE CHICAGO

TRENTON
BRASS·PRODUCTS

Standardization on Trenton Brass Products shows that you are keeping pace with quality competition. If by installing better equipment such as Trenton Brass goods you can give better service, you'll find plenty of profit on your books this year.

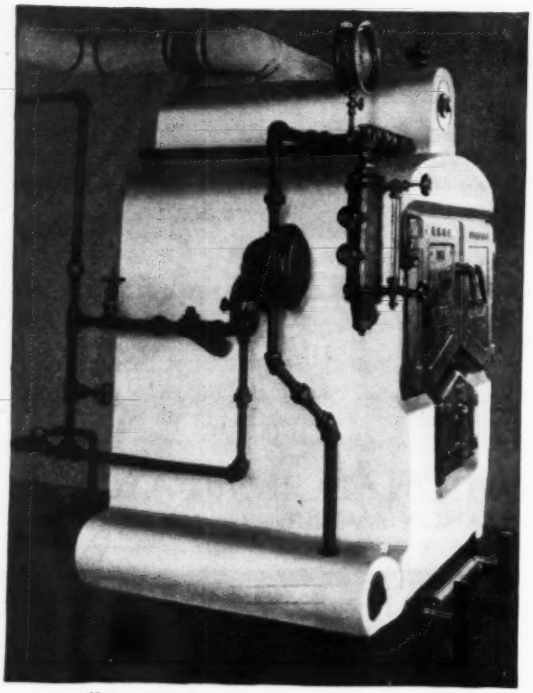
If you have not our complete catalog send for it today.

THE TRENTON BRASS & MACHINE COMPANY
Trenton » » New Jersey
Represented by ROLLIN C. WILSON
7 East 42nd Street - - - - New York, N. Y.
261 Franklin Street - - - - - Boston, Mass.

# Protect

**your boiler installations with this**

# Day and Night Watchman



*Webster Boiler Protector installed on Cast Iron Boiler*

The exclusive patented Webster Boiler Protector positively protects low pressure heating boilers against damage resulting from accidental low water. Placed 3" below the normal water line, it is not intended to serve as a "feeder" but as emergency protection. Positive action and immense capacity are assured by the enormous power inherent in its unique design. Repeated severe tests, and operation in hundreds of installations justify the statement, "The Webster Boiler Protector cannot be stuck closed." . . . Made in two sizes for all low pressure heating boilers. Send for the Boiler Protector bulletin.

WARREN WEBSTER & COMPANY, Camden, N. J.
Pioneers of the Vacuum System of Steam Heating
*Branches in 60 principal U. S. Cities—Darling Bros., Ltd., Montreal, Canada*

*The Webster Boiler Protector* aP 13


root of the radiation gives sizes comparing favorably with the regular table except where the load falls to nearly nothing but it must not be forgotten that, if the two mains were united at the boiler, the resulting size would be 2½ in. and that the recommendation is not to reduce the main to less than 2 in., if the main at the boiler starts off over 2½ in. As this main would start off with just 2½ in. it probably would not be advisable to reduce it to less than 1½ in. until it got down under the water line and no longer had to handle any air.

Looking over the sizes of piping called for on the isometric diagram and comparing these with those computed by two entirely different tables indicates that the contractor was liberal in the sizes he used; possibly every pipe size on the job could have been reduced at least one size even after adding the 50 sq. ft. allowed for the hot water tank with the coil. It must be admitted, however, that this job was an exceptionally satisfactory one as far as operation goes, and that the radiators throughout could be heated at any time without any pressure indicating on the steam gauge. On the other hand, it was not a particularly quick job to heat up in the morning owing to the greater amount of air to be blown out of the large pipe, which would have required much less time had the pipes been of smaller size. Before leaving this job it might be added that a small coal-burning hot water heater was used for summer hot water heating, although this has not been indicated on the isometric diagram.

## Start Sales Drive on Low Cost of Labor and Materials

(Continued from Page 23)

in Kansas City, Mo., took a 20 per cent cut in their wages.

In literally hundreds of other smaller cities, towns and villages, the wages of mechanics have been reduced.

If we assume that 1932 will be about on a par with last year, then the total building volume for the 37 eastern states will amount to approximately $3,000,000,000, according to the Dodge reports. In 1931, this amounted to about 267,000,000 sq. ft. Authorities estimate that about 50 per cent of the cost of construction goes for labor, and the balance for material. On that basis, the labor bill on the 1931 construction volume was approximately $1,500,000,000. With wage reductions of 20 per cent, the saving on the labor bill alone in 1932 should amount of $300,000,000. In other words, for about $2,700,000,000 as much building can be done this year as was done last year for $3,000,000,000, provided wage reductions are adopted all over the country.

In addition to the tremendous saving in labor costs, prices of building materials are in most cases at the lowest level in many years.

### DEATH OF KIRKS H. TAYLOR

Kirks H. Taylor, purchasing agent of the Illinois Glass Co., now the Owen-Illinois Glass Co., Alton, Ill., died in that city recently. He had been president of the National Association of Purchasing Agents in 1925 and 1926. Mr. Taylor was in his 65th year at the time of his death.

# MARKETS

## BUSINESS REPORTS FROM LARGE JOBBING CENTERS

STATEMENTS by manufacturers' salesmen interviewed during the past fortnight, to the effect that wholesalers continue to show little inclination to purchase for other than their immediate needs, are borne out in the figures given below from the Bureau of the Census. Contractor demand continued to hold at a moderate level and in most cases jobbers were able to take care of this from stock on hand. Makers report no difficulty in meeting their customers' requests for material that is needed in a hurry.

No reports have been received from manufacturers since our last review appeared of changes in their published prices to wholesalers. The new prices, which were placed in effect last month by soil pipe manufacturers, reduced manufacturers' published prices on that commodity to the lowest level in many years.

A gain of almost 5 per cent in construction awards during February as compared with the low figures of January reflects a normal rise approximating seasonal proportions, according to F. W. Dodge Corp. Losses from February, 1931, were registered in all four of the major construction classes, with public utilities making the best relative showing and public works and residential building the poorest comparisons.

The total in new construction awards for February was $89,045,800. For the first two months of 1932, construction awards of all descriptions in the 37 eastern states are reported by Dodge to amount to $173,844,200.

January shipments of vitreous china plumbing fixtures, including all vitreous-chinaware which in regular practice is connected with a drainage system, were 117,461 pieces, as compared with 104,703 pieces in December and 200,908 in January, 1931, according to the Bureau of the Census.

January shipments of oil burners, based on data reported to the Bureau of the Census by 103 manufacturers, were 3,643 units, as compared with 3,804 in December and 5,056 in January, 1931.

February wholesale prices of six standard plumbing fixtures for a six-room house, ascertained by the Bureau of the Census from reports of *10 representative manufacturers and wholesalers, averaged $88.42 as compared with $88.32 in January, $96.49 in February, 1931, and $103.69 in February, 1930. (*Two of the 12 establishments heretofore reporting out of business.)

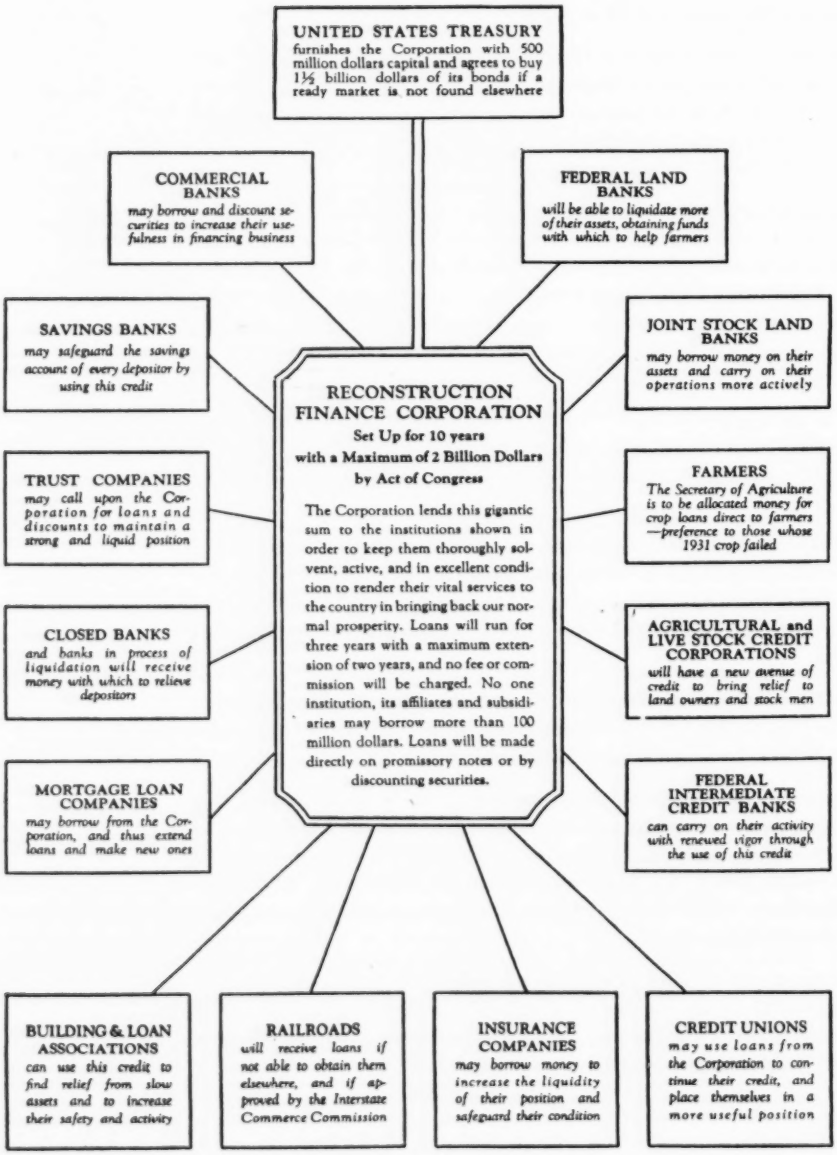
January shipments of solid porcelain plumbing fixtures, as reported to the Bureau of the Census by nine manufacturers comprising the entire industry, were 4,030 pieces, as compared with 3,100 in December and 11,927 in January, 1931.

# How Government's 2 Billion Dollar Reconstruction Fund Will Function

ADVANTAGES to the plumbing and heating industry coming from the organization of the Reconstruction Finance Corporation were told by a speaker at last week's meeting of the Eastern Supply Association. Through this corporation, the government has endeavored to wipe out the causes of fear and doubt that have paralyzed our business structure. Leading economists point out that the nation's energy and resourcefulness will be quickened all along the line, to the end that manufacturer and merchant, employer and laborer, farmer and home owner, banker, depositor and borrower may embark with vigor and assurance upon constructive endeavor.

### TO WHOM THE MONEY IS LOANED

The business of the corporation is to lend money to the various institutions shown in the chart on this page. The provision made for loans to Building and Loan Associations, Mortgage Loan Companies and Savings Banks is of particular interest to the plumbing and heating industry. At the end of two years of loan making, the corporation will proceed to liquidate its assets and wind up its affairs. Loans will not be made to finance new enterprises except in the case of farmers.


UNITED STATES TREASURY
furnishes the Corporation with 500 million dollars capital and agrees to buy 1½ billion dollars of its bonds if a ready market is not found elsewhere
COMMERCIAL BANKS
may borrow and discount securities to increase their usefulness in financing business
FEDERAL LAND BANKS
will be able to liquidate more of their assets, obtaining funds with which to help farmers
SAVINGS BANKS
may safeguard the savings account of every depositor by using this credit
JOINT STOCK LAND BANKS
may borrow money on their assets and carry on their operations more actively
RECONSTRUCTION FINANCE CORPORATION
Set Up for 10 years with a Maximum of 2 Billion Dollars by Act of Congress
The Corporation lends this gigantic sum to the institutions shown in order to keep them thoroughly solvent, active, and in excellent condition to render their vital services to the country in bringing back our normal prosperity. Loans will run for three years with a maximum extension of two years, and no fee or commission will be charged. No one institution, its affiliates and subsidiaries may borrow more than 100 million dollars. Loans will be made directly on promissory notes or by discounting securities.
TRUST COMPANIES
may call upon the Corporation for loans and discounts to maintain a strong and liquid position
FARMERS
The Secretary of Agriculture is to be allocated money for crop loans direct to farmers —preference to those whose 1931 crop failed
CLOSED BANKS
and banks in process of liquidation will receive money with which to relieve depositors
AGRICULTURAL and LIVE STOCK CREDIT CORPORATIONS
will have a new avenue of credit to bring relief to land owners and stock men
MORTGAGE LOAN COMPANIES
may borrow from the Corporation, and thus extend loans and make new ones
FEDERAL INTERMEDIATE CREDIT BANKS
can carry on their activity with renewed vigor through the use of this credit
BUILDING & LOAN ASSOCIATIONS
can use this credit to find relief from slow assets and to increase their safety and activity
RAILROADS
will receive loans if not able to obtain them elsewhere, and if approved by the Interstate Commerce Commission
INSURANCE COMPANIES
may borrow money to increase the liquidity of their position and safeguard their condition
CREDIT UNIONS
may use loans from the Corporation to continue their credit, and place themselves in a more useful position

### WHAT WILL BE THE EFFECT?

In creating this gigantic credit, the government has aimed at all the elements of the depression in order to get to the root of its causes. According to its proponents: "Bank accounts will be safeguarded; railroading will be stabilized; business will find renewed confidence and enhanced credit; agriculture will be insured higher prices and better markets; labor will enjoy more employment; purchasing power will increase." This release of credit should help the building industry.

# The Metal Market

| | Mar. 14 | Avg. Feb., 1932 | Avg. Dec., 1931 | Mar., 1931 |
|---|---|---|---|---|
| PIG IRON— | | | | |
| No. 2 foundry, Chicago | $16.50 | $16.50 | $16.60 | $17.50 |
| PLATES AND SHEETS— | | | | |
| Steel boiler plates, Pittsburgh, per lb | 1.50c | 1.50c | 1.50c | 1.65c |
| Blue annealed sheets, No. 10, Pittsburgh, per lb | 1.70c | 1.70c | 1.85c | 1.90c |
| *Hot rolled annealed sheets, No. 24, Pittsburgh, per lb. | 2.20c | 2.15c | 2.40c | 2.35c |
| Galvanized sheets; No. 24, Pittsburgh, per lb | 2.80c | 2.75c | 2.90c | 2.90c |
| TIN— | | | | |
| Straits tin (spot) New York | 22.00c | | | |
| LEAD— | | | | |
| E. St. Louis | 3.05c | | | |

**The Old Metal Market**
Dealers' Buying Prices

| | Per lb. | | Per lb. |
|---|---|---|---|
| Aluminum clippings | 11½c | Copper, light | 2¾c |
| Block tin pipe | 15½c | Heavy crucible copper | 4 c |
| Brass, light | 1¾c | Zinc, old | 1 c |
| Brass, heavy yellow | 2 c | Lead, heavy | 2 c |
| No. 1 comp. red brass | 2¾c | Solder joints (close cut) | 3¼c |
| Heavy copper and wire | 3 c | | |

NOTE: Prices are those quoted on Monday of this week.
*Comparisons are with old classification No. 24 black sheets.

# Obituary

### ROBERT H. HARRINGTON

Robert H. Harrington, plumbing and heating contractor of Ware, Mass., and a member of the Massachusetts State Association of Master Plumbers, died recently. He was in his 47th year at the time of his death. He was a son of the late Robert G. Harrington who established the business which his son later conducted. Mr. Harrington was highly regarded in the business and civic life of his community and by his associates in the state association. He is survived by his wife, two daughters and three brothers.

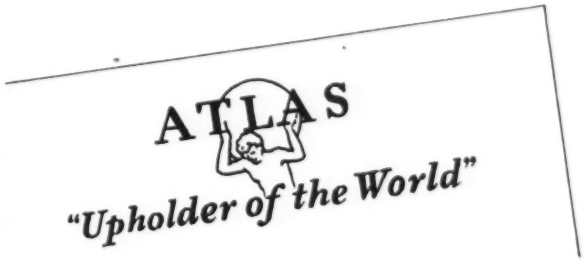
### HARRY H. BARRICK

Harry H. Barrick, vice president and treasurer of the Carson-Payson Co., plumbing and heating contracting firm of Danville, Ill., died on January 30. The firm with which Mr. Barrick was associated is a member of the Illinois Master Plumbers Association.

### F. L. KELLY

F. L. Kelly, founder of the Kelly Plumbing Co., now H. Kelly & Co., of Minneapolis, Minn., died February 9 at St. Mary's hospital in that city after a brief illness in his 82nd year. The Very Rev. F. L. Kelly, for that was his title, was born in Brooklyn, N. Y., April 5, 1850. As a young man he came to Minneapolis, where he founded the Kelly Plumbing Co. In 1887 he left the plumbing business to his brother Hubert Kelly and entered the Dominican order at St. Rose's priory at Springfield, Ky. There he made his vows to enter the religious life in 1888 and was sent to Somerset, Ohio, for his philosophical and theological studies, and it was there that he was ordained a priest on November 1, 1892. In the following years he served churches at Kansas


Last month we announced the "Stand-Under" Test . . . NOW READ THIS:




The Duriron Co., Inc.
Dayton, Ohio, U.S.A.

Gentlemen:

Have just heard about the "Stand Under" Test for Duriron Acid-Proof Drain Pipe.

I have been standing around holding up this cock-eyed world for centuries and I believe that I'm the champion "Stander-er Under-er" of the Universe.

I'll say this: To date I haven't yet seen a Duriron Drain Pipe leak, either at the joints or any other place, from handling the acid wastes of laboratories.

But I'm a stout-hearted soul - I'm not going to quit my job until I do.

Yours very truly,
Atlas

We certify that Atlas has not been paid and will not be paid for this testimonial. But if you have any worlds to uphold, we can recommend him highly.

THE DURIRON COMPANY, INC.
410 N. Findlay Street Dayton, Ohio

DURIRON ACID PROOF DRAIN-PIPE

# EVERY ONE-PIPE STEAM SYSTEM *can be quickly made a* VACUUM SYSTEM

Warco No. 2 Vacuum Price $2.15 Ask your Wholesaler

**—which gives much more heat, saves fuel and saves attention to fire.**

**A Warco No. 2 Vacuum Valve on each radiator, a Warco No. 3 V or No. 6 on the return, and the Warco Compound Gauge on the boiler—that's all the installation necessary.**

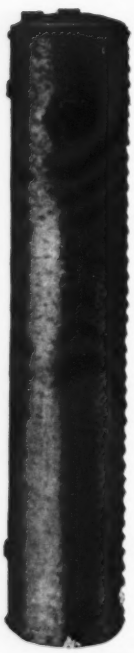
**Write for complete information. There's good money for you in *modernizing* one-pipe steam systems.**

**W. A. RUSSELL & CO., *Established 1890***

New York Chicago Boston Detroit Denver Minneapolis

**"Warco" *Automatic Air & Vacuum* Valves**

# An Open Letter to Plumbing Contractors:



Your customers seldom, if ever, ask for a particular make or grade of Range Boiler. They rely on your judgment. Can you afford to lose that confidence and good will by installing anything but the highest quality obtainable? On your next job install a

## PENNSYLVANIA

**PHILADELPHIA HAND MADE**

## RANGE BOILER

The original Malleable Head type made with much hand work. Under normal water conditions, the Extra Heavy is guaranteed for 5 years and Double Extra Heavy for 7 years.

***Sold Thru Jobbers***

Complete line of *All Welded* and *Riveted and Welded* Galvanized Boilers.

JOBBERS: Sample of any boiler sent on request for 30 day inspection.

**PENNSYLVANIA RANGE BOILER CO.**
*Established 1895*
**24th & Washington Avenue, Philadelphia, Pa.**


City, Mo., Denver, Colo., and Columbus, Ohio. In 1896 he became chaplain of the Columbus penitentiary, to which work he devoted 29 years. Here he became known throughout the country for his prison reform efforts. In 1925 he resigned as chaplain and returned to Minneapolis, taking up residence at the Home of the Dominican Fathers, where he lived until the time of his death. Hubert Kelly, of the plumbing concern of H. Kelly & Co., and two other brothers and a sister survive him.

### W. D. SWAIM

W. D. Swaim, prominent master plumber of Chattanooga, Tenn., died at his home in that city on February 29. He was in his 42nd year at the time of his death. Mr. Swaim had been an active association worker for many years, having served for two terms as president of the Associated Master Plumbers of Tennessee. His first term of office was so successful that he was unanimously re-elected, an honor that has been bestowed on only a few members of the Tennessee association. Mr. Swaim for two years was president of the Chattanooga local association of master plumbers.

W. D. Swaim

He was a member of the Elks, which body had intended soon to elevate him to a prominent position in the order, as a result of his activities with the organization. Mr. Swaim is survived by his widow, his mother, a son and a daughter.

### PETER CAMPBELL

Peter Campbell, plumbing and heating contractor of St. John, N. B., died at his home in that city on February 16. He was in his 92nd year at the time of his death, and had been associated with the plumbing and heating industry for 76 years. His father, too, was a plumbing and heating contractor, and at the age of 15 the son entered his father's business.

In 1876 he became a member of Bowes, Campbell & Ellis, plumbing and heating contracting firm. In 1888 he became the sole owner and renamed it the P. Campbell Co. Later, his son, W. H. Campbell, joined the organization and is the present manager. He had been a Mason for more than 40 years.

### J. E. ECKLUND

J. E. Ecklund, plumbing and heating contractor of Union, Ia., died recently.

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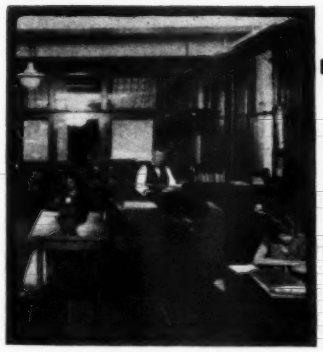
### FRED J. TIMMERMANN'S FATHER DIES

Fred J. Timmermann, past president of the Contracting Plumbers' Association of St. Louis, Mo., has the sympathy of his friends in the industry in the recent death of his father, George Timmermann. Funeral services were held in Ferguson, Mo. The elder Mr. Timmermann was in his 76th year at the time of his death.



# TRADE

News of Plumbing and Heating Contractors

## MASSACHUSETTS PLUMBERS OPPOSE UTILITY LEGISLATION

### *State Association Takes Stand Opposite to Dealers in Other Sections*

Two bills now before the state legislature of Massachusetts which would prohibit the sale of appliances by gas and electric companies are being opposed by the Massachusetts State Association of Master Plumbers. In several other states during the past year, the master plumbers have fought against such laws. In the majority of states considering such legislation, the master plumbers have united with other appliance dealers in urging legislation taking the utility companies out of the merchandising business.

The legislative committee of the Massachusetts association, of which Andrew F. Curtin is chairman, carried out the unanimous vote of the board of directors in appearing late in February before the power and light committee of the state legislature. A bulletin of the state association says "Careful study fails to reveal that either of these measures would benefit the public in any way. Legislators should proceed with utmost caution during the present economic crisis, for fear that what is conceived to be constructive legislation prove destructive and disastrous. To such an extent would these bills react to the master plumbers' disadvantage that one is constrained to wonder by whom and for what purpose they were inspired. They are 'bad medicine' and if ever one of them 'comes out of committee,' no master plumber should fail to instruct his representative and senator to that effect."

#### BILL WOULD REGULATE "PLAN FILING" IN NEW YORK

A bill is now pending in the New York State legislature which provides that plans for a building may be filed by either an engineer or an architect, and county registration is made mandatory. The passage of this bill will end a long controversy between engineers and architects and its passage is sought by both organizations, according to reports.

## PHILADELPHIA MASTERS WIN GAS APPLIANCE BUSINESS

### *Utility Companies Agree to Confine Their Activities to Sale of Power*

That a satisfactory arrangement has been reached with the local utility companies in regard to the merchandising of gas appliances was brought out in the report of the Public Utilities Committee at the March 3 meeting of the Philadelphia Master Plumbers Association.

This committee, which is made up of twenty master plumbers in Philadelphia and surrounding territory, reported that the utilities are prepared to confine their activities to the sale of power. Under the new arrangement, all gas heating appliances are to be sold and installed by a registered master plumber of the customer's choice.

The meeting was presided over by Harry L. Stilwell, due to the illness of President Maney J. Feeney. Mr. Feeney has been dangerously ill since February 22, but at the time of this writing was reported on the road to recovery.

Edward Quaid and Walter Raid were named on the local committee to meet with the utility companies in the future.

Secretary Robert H. Pflug-Felder called the attention of the members to constructive editorial material that had appeared recently in local newspapers. It was pointed out that there are now 1,542 registered master plumbers in the city, a decrease of 207 in comparison with last year.

The educational hour, which was directed by Mr. Stilwell, was featured with a talk by V. H. Metz of the Bryant Heater & Mfg. Co., who spoke on the sale of gas-fired boilers for home heating. He stated that there had been a good increase in the sale of this type of heating equipment to the domestic market during the past year. He urged his hearers to make more personal calls on prospects and to keep in touch with their prospects through the mail.

In a brief talk, Mr. Stilwell touched on direct-to-you competition. He cited cases where the actual profit was

less than 6 per cent, with the result that the plumber could not profit by the sale of the fixtures alone. He went on to show that under such conditions the plumber must depend on labor and installation material for his profit.

Mr. Stilwell also pointed out that in case of a leak in a water service line, it is the owner's privilege to call his own plumber. He said the inspector for the Water Bureau is not supposed to call in a plumber friend to do the job. Mr. Stilwell asked the association members to report any violations of this rule.

Some discussion was given to the forthcoming National convention in New York City and it was indicated that a large delegation from Philadelphia would attend the affair. Special plans are being made to honor George F. Uber of Philadelphia, a charter member of the National association, at the convention. It will be the 50th National convention for Mr. Uber.

### GEORGIA MASTERS TO HOLD CONVENTION IN APRIL

Monday and Tuesday, April 25 and 26, have been selected as the dates for the annual convention of the Georgia State Association of Master Plumbers. This year's meeting will be held at Valdosta, Ga., and convention headquarters will be at the Gordon hotel. B. J. Seekinger of Atlanta is president of the association, and Paul Elmore of Albany is secretary.

### FLORIDA CONVENTION TO BE HELD MAY 2 AND 3

The Florida State Association of Master Plumbers and Heating Dealers will hold its 1932 annual convention at Tampa on May 2 and 3. Lee Phillips of Lakeland is president of the state association; D. A. Mayfield, Sr., of Jacksonville is vice president; Robert Engstrom, Jacksonville, treasurer; and George B. Shaw, Tampa, secretary.

### KENTUCKY SETS CONVENTION DATES

The Kentucky State Association of Master Plumbers has selected May 9, 10 and 11 as the dates for its annual convention, according to word just received from O. H. Mitzlaff of Louisville, state secretary. The meeting will be held at Frankfort, Ky.

### PLANS COMPLETED FOR AIR CONDITIONING COURSE AT MICHIGAN STATE COLLEGE

Final arrangements have been completed for the three-day short course on air conditioning and forced warm air heating which is to be held at Michigan State College of Agriculture and Applied Science, March 22, 23 and 24. A recent announcement by the College points out that admission to the course is open to anyone interested, from any part of the country.

# Washington Office Helps Master Plumbers

*The editor of* DOMESTIC ENGINEERING, *a few weeks ago, visited the new offices of the National Association of Master Plumbers at Washington, D. C. The following comments reflect both his own impressions of the office and the viewpoints of association officers on the greater efficiency which the removal to Washington made possible.*

THE National Association of Master Plumbers, organized in 1883, voted at its last convention to establish permanent headquarters in Washington, D. C. For 49 years, the office of this association has been located in the city in which the newly elected president resided, but for many good reasons it was finally decided that the office should be permanently in Washington.

The national office, as now situated, is centrally located for the larger percentage of its members. It occupies a suite of three rooms in the newly erected Shoreham building, 15th and H streets, N. W., on the site of the famous and well known Shoreham Hotel, and is well adapted for the purposes of the National Association.

In charge of the National office is John F. Donovan, who as executive secretary has been connected with the National Association for the past five years, and who is thoroughly familiar with the routine work and with the activities of the organization and the industry.

Since his arrival in Washington, the executive secretary has become a member of the Washington Trade Association Executives, as well as the American Trade Association Executives, and has established friendly connections with many of the departments and bureaus of the government, as well as an acquaintance with the representatives in Washington of other trade associations, and legislative agencies, and this contact is valuable to the association which he represents.

In this city is located the headquarters of more than one hundred national trade associations, twenty of which are directly connected with the building trade, among them the Association of General Contractors, the American Federation of Labor and the United Association of Journeyman Plumbers and Steam Fitters.

The department of commerce, with its various bureaus and divisions, the federal trade commission, and many other governmental departments and bureaus are located here.

Since the national office has been established in Washington, many matters demanding prompt action have been presented which required personal contact with some of these departments and interviews and conferences by the executive secretary with representatives of other trade associations. The wisdom of this move has already been demonstrated and justified.

Now that congress is in session, the national office is in a position to obtain prompt information pertaining to legislation which may be of interest to the industry.

Although the national president and national secretary reside in Boston, they keep in contact with the affairs of the Association by frequent visits to the national office, by telephone, telegraph, and whenever necessary by visits of the Executive Secretary to Boston. In no way is the routine work of the National Association retarded by reason of the Executive offices being located in a city removed from the residence of the National President.

## *Sometimes* WE *are surprised*

BUT we try not to show it... This time a husband said his wife was arriving in 10 minutes, and could we help him arrange a surprise dinner party for her? Here was a list of 12 guests ... would we telephone them and "fix things up" while he dashed to meet his wife at the station? There were 14 at that dinner ... and his wife *was* really surprised!

It's our belief that a hotel should do *more* than have large, airy rooms, comfortable beds, spacious closets. Beyond that, we daily try to meet the surprise situation *(without surprise)*, no matter what the guest wants.

***Extra service at these 21***

**UNITED HOTELS**

| | |
|---|---|
| NEW YORK CITY'S *only United* | The Roosevelt |
| PHILADELPHIA, PA. | The Benjamin Franklin |
| SEATTLE, WASH. | The Olympic |
| WORCESTER, MASS. | The Bancroft |
| NEWARK, N. J. | The Robert Treat |
| PATERSON, N. J. | The Alexander Hamilton |
| TRENTON, N. J. | The Stacy-Trent |
| HARRISBURG, PA. | The Penn-Harris |
| ALBANY, N. Y. | The Ten Eyck |
| SYRACUSE, N. Y. | The Onondaga |
| ROCHESTER, N. Y. | The Seneca |
| NIAGARA FALLS, N. Y. | The Niagara |
| ERIE, PA. | The Lawrence |
| AKRON, OHIO | The Portage |
| FLINT, MICH. | The Durant |
| KANSAS CITY, MO. | The President |
| TUCSON, ARIZ. | El Conquistador |
| SHREVEPORT, LA. | The Washington-Youree |
| TORONTO, ONT. | The King Edward |
| NIAGARA FALLS, ONT. | The Clifton |
| WINDSOR, ONT. | The Prince Edward |

UNITED HOTELS



# STOP LEAKS
## MAKE LOOSE PARTS TIGHT

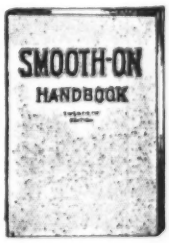
SMOOTH-ON No. 1 stops leaks and restores permanent tightness at screw threads, gaskets, seams, rivets, cracks and breaks and restores pitted or corroded contact faces. It makes a dependable repair in the shortest time, with least labor and at a cost that is insignificant in comparison with the expense otherwise necessary for new parts and the loss in production during the longer interruption for doing the work by other method.

Use Smooth-On No. 1 for emergency jobs on pipe lines, flanged or threaded connections, boilers, on engine, pump and compressor cylinders, turbine casings, on steam, water, oil, ammonia and gas lines, tanks, feedwater heaters, etc.

Stripped bolts, studs, nuts and wood screws reset with Smooth-On No. 1 hold as well as when new. Use it also for keeping nuts from loosening and backing off, for anchoring pipe hooks, shelf brackets, foundation bolts, pipe posts, etc., in concrete or masonry, and for resetting loose tool handles.

## *The Smooth-On Handbook*

There are seven SMOOTH-ON cements, each for specific uses, and all explained and illustrated in the 136-page Smooth-On Handbook.




The directions and diagrams will post you well on Smooth-On, where to use each kind, how to apply for best results, and what to expect from the finished job, based upon pictures and data from typical applications.

*Mail the coupon for a free copy and get Smooth-On No. 1 in 7-oz. and 1 or 5-lb. can from any hardware store or if necessary direct from us.*

**Do it with SMOOTH-ON**

SMOOTH-ON MFG. CO.
Dept. 12, 570 Communipaw Ave., Jersey City, N. J.

Please send copy of the SMOOTH-ON HANDBOOK.

Name .....

Address .....

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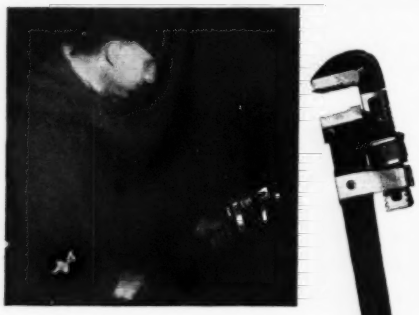
3-19-32

# ARMSTRONG BROS.



## In these 10 ways a Better Pipe Wrench

The ARMSTRONG BROS. PIPE WRENCH is more than an improved "Stillson". It incorporates distinctly new (patented) features, is a better wrench in every way. It has a handiness that makes it seem a part of you and strength beyond the greatest need.

Among its features are:

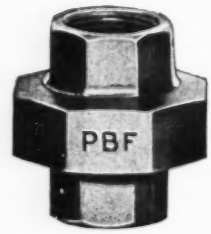
1. Elimination of "frame."
2. Heavy, forged-in side lugs reinforced by recessed nut — to take up side strain.
3. Nut cannot fall out.
4. Improved (coil) spring.
5. Self-cleaning, ball and socket action.
6. Handle strongest (instead of weakest) at point of strain.
7. No projections below line of handle.
8. Replaceable tool-steel jaws.
9. All-steel construction.
10. Perfect balance.

*from the line of "Better Pipe Tools" distinguished by the Arm-and-Hammer Trade Mark.*

*Write for Catalog P-10*

ARMSTRONG BROS. TOOL CO.
*"The Tool Holder People"*
323 N. Francisco Ave. CHICAGO, U. S. A.






# PHOENIX
## BRASS FITTINGS

EVERY Brass Fitting made by PHOENIX is of RED METAL and receives the following tests:

A—Inspection after Casting.
B—Inspection prior to Threading.
C—Inspection of Threading.
D—Air-Under-Water pressure test.

*"If it's a 'P.B.F' it's a Quality Fitting"*

**Phoenix Brass Fittings Corp.**
Irvington, New Jersey


### CASE SCHOOL HOLDS AIR CONDITIONING CONFERENCE

A three-day conference on air conditioning is being held at the Case School of Applied Science, Cleveland, Ohio, March 17-19, sponsored by the school and the Cleveland Engineering Society.

The conference is in the nature of a symposium for presenting the fundamentals and the recent developments in summer and winter conditioning of indoor air. A special effort is being made to present the economics of the subject, but the human comfort phase will receive its fair share of attention. The conference is open to anyone interested.

A few of the many papers included on the program are: "Air Conditioning in the Home," by F. B. Rowley, president, American Society of Heating and Ventilating Engineers; "Problems of the School and Public Buildings," by S. R. Lewis, Chicago; "Automatic Regulation in Air Conditioning," by M. F. Rather, Johnson Service Co., Cleveland; "Cooling for Profit," by M. K. Arenberg, Ilg Electric Ventilating Co., Chicago; "Heat and Power Load Curves as Affected by Air Conditioning," by J. H. Walker, Detroit Edison Co., Detroit, Mich.; "The Economies of Air Conditioning in Large Buildings," by William H. Driscoll, Thompson-Starrett Co., New York City; "Requirements for the Successful Unit Conditioner," by R. E. Robillard, Frigidaire Corp., Dayton, Ohio.

### MISSOURI BOARD DISCUSSES STATE CONVENTION PLANS

At a recent meeting in Kansas City of the board of directors of the Missouri Master Plumbers Association it was decided that it would be best for the convention arrangements committee of the Kansas City local to handle the entire program for the forthcoming Missouri state convention. This year's meeting, as previously announced, is to be held in Kansas City, April 18 and 19. Headquarters will be at the Muehlbach hotel.

The board, however, recommended that Rupert J. Weber of Chicago, National director, be placed on the program, and that arrangements be made for a meeting of the state board on Sunday evening, April 17.

The state officers present at the meeting were H. J. Morrison, president; Charles Burgess, secretary; Frank J. Murphy, second vice president; John Corrigan, treasurer; Louis Fink, chairman of the board; and Edw. Quinn and Fred Timmerman, directors.

### NEW ORLEANS CONTRACTOR DISAPPEARS MYSTERIOUSLY

Efforts to locate Dee Brown, plumbing and heating contractor of New Orleans, La., who disappeared mysteriously on September 10, 1931, have thus far been futile. Mr. Brown left New Orleans in the morning for Hattiesburg, Miss., where he arrived safely. He was driving a Hudson sedan, license No. 16-851 A (1931). That afternoon he left Hattiesburg to return to New Orleans, but has not been heard from since.

Fears expressed by his family that he may have suffered from a lapse of memory were based on the fact that he recently sustained a head injury.

The missing man is about 55 years old, 5 ft. 6 in. tall, with dark thin hair which is turning grey. His eyes are grey and he weighs about 185 lb. Anyone knowing his whereabouts is asked to communicate with his sister, Mrs. Wm. Frazer, 2003 N. 33rd Ave., Birmingham, Ala.

### OREGON CONVENTION DATES ARE ANNOUNCED

The Oregon State Association of Master Plumbers will hold its 1932 annual convention in The Dalles, Ore., on May 13 and 14, according to word just received from Walter J. Widmer of Portland, state secretary. Roy E. Thompson of Tacoma, Wash., a director of the National Association of Master Plumbers, is already scheduled to appear on the program. R. D. Rennie of Portland is president of the Oregon state association, and E. O. Pratt of Salem, vice president.

### PENINSULA ASSOCIATION ELECTS OFFICERS

The Peninsula Merchant Plumbers Association (Calif.), has elected the following officers for the ensuing year: Phillip Brand, Redwood City, president; E. Allen, Burlingame, vice president; C. Peters, San Jose, vice president; H. Hansen, Palo Alto, treasurer; J. F. Lindstrom, Burlingame, secretary; and J. Peabody, San Jose, sergeant-at-arms.

The directors, in addition to the above mentioned officers are: F. Berryman, Los Gatos, J. Bracesco, Menlo Park, Harry Lee, San Mateo, and W. Green, Millbrae. Ed. Hokom continues as manager of the association.

### SEATTLE GOLFERS HOLD TOURNAMENT

The Seattle (Wash.) Plumbing and Heating Golf Association held its February tournament and dinner at the Olympic Golf and Country club. The feature event of the afternoon was the play-off of the tie of the preceding meeting between Myron McElwaine of the Seattle Plumbing Supply Co. and W. G. Montgomery of the Northwest Plumbing Supply Co.; the match finally going to Mr. McElwaine. He won the Class A match with a 76-4-72.

The Class B match was won by Cal Little of Grinnell Co. of the Pacific, with a score of 98-26-72. The Class C match was captured by E. K. Blackford of Walworth Co. to the tune of 104-30-74.

### MONTREAL MASTERS ASK "SEPARATION OF BIDS"

A delegation from the Master Plumbers Association of Montreal, Quebec, Can., visited the Executive Committee of Montreal, recently, and urged that when city contracts are let by public tender it would be to the advantage of the city and business in general if separate tenders were called for plumbing and steam heating.

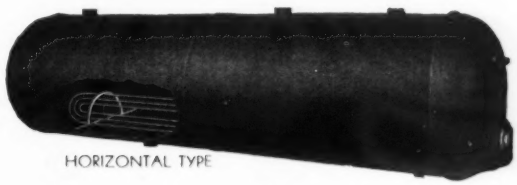
The city engineer, J. E. Blanchard, discussed the whole question with the delegation and promised that it should receive careful consideration.

### TRI-CITY LEAGUE TRIES NEW TYPE OF MEETING PROGRAM

A different type of program was tried out at a recent meeting of the Tri-City Plumbing and Heating Trade Development League, which was held in Rock Island. Instead of a dinner followed by speakers and entertainment, the meeting was given over to general discussion by the journeymen, contractors, wholesalers and manufacturers in attendance. A buffet supper was served later in the evening. The experiment seemed to meet with the hearty approval of those who attended.

Plans were announced for a forthcoming dance and card party to be sponsored by the league.


COPPER
STORAGE TANKS
AND
STORAGE TYPE HEATERS



HORIZONTAL TYPE

This is the Gerstein & Cooper Copper Horizontal Type Tank that has solved so many storage and storage heater problems.

It is furnished with or without the heating elements which are easily removed.

The table below will be of assistance to you in computing the sizes of Gerstein & Cooper Copper Tanks you need.

GERSTEIN & COOPER

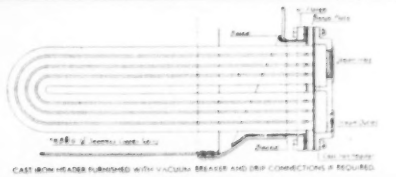
*Write for complete data*

*Also makers of Copper Range Boilers*

G & C BOILERS
TRADE MARK REGISTERED

HEATING CAPACITY IN GALLONS PER HOUR 40-180° WITH STEAM AT

| HS | 0 lbs. | 5 lbs. | 10 lbs. | 15 lbs. | 25 lbs. | 50 lbs. | 75 lbs. | 100 lb. |
|---|---|---|---|---|---|---|---|---|
| 2½ | 50 | 65 | 75 | 85 | 95 | 115 | 130 | 140 |
| 5 | 100 | 130 | 150 | 170 | 190 | 230 | 260 | 280 |
| 10 | 200 | 260 | 300 | 340 | 380 | 460 | 520 | 560 |
| 15 | 300 | 390 | 450 | 510 | 570 | 690 | 780 | 840 |
| 20 | 400 | 520 | 600 | 680 | 760 | 920 | 1040 | 1120 |
| 25 | 500 | 650 | 750 | 850 | 950 | 1150 | 1300 | 1400 |
| 30 | 600 | 780 | 900 | 1000 | 1140 | 1380 | 1560 | 1700 |
| 40 | 800 | 1040 | 1200 | 1360 | 1500 | 1840 | 2080 | 2240 |
| 50 | 1000 | 1300 | 1500 | 1700 | 1900 | 2300 | 2600 | 2800 |
| 75 | 1500 | 1950 | 2250 | 2550 | 2850 | 3450 | 3900 | 4200 |
| 100 | 2000 | 2600 | 3000 | 3400 | 3800 | 4600 | 5200 | 5600 |
| 150 | 3000 | 3900 | 4500 | 5100 | 5700 | 6900 | 7800 | 8400 |



CAST IRON HEADER FURNISHED WITH VACUUM BREAKER AND DRIP CONNECTIONS IF REQUIRED

GERSTEIN & COOPER COMPANY
1-3 West Third Street :: So. Boston, Mass.

GERSTEIN & COOPER CO.
522 Park Ave., Baltimore, Md.

E. N. COKEFAIR, INC.
New York, N. Y.

G. MASON PRICE
Montreal, P. Q.

TROOP WATER HEATER CO.
Pittsburgh, Pa.

# RETAIL ADVERTISING SERVICE

LET'S continue to push the "Spend for the Home in 1932" idea. It lends a fresh note to the remodeling movement—and it is right in line with what thinking people believe today—that the home is the safest and best investment a man can make.

## Spend for the Home

THERE is a satisfaction and a security about the home that can not be achieved elsewhere—and that satisfaction is heightened when the appointments of the home are such as to offer the greatest comfort and convenience. We urge now spending for the home as an aid to business—whether it be for modern plumbing, which we handle—or for any other product that goes to make the home more comfortable and charming.

(In this space Your Name, Etc.)

**For one-column space**

## Buy Now for the Home

**Experts say that if every home owner were to undertake to modernize, it would do much to alleviate conditions. That's why we are urging the people of this community to "Spend for the Home in 1932"—because spending in that direction will be reflected in every other line of business. Besides, now is a good time to bring the household equipment up to date. Prices are lower than they have been for years and values are consequently at a high level. Phone us for expert advice on your plumbing remodeling.**

**(In this space Your Name, Etc.)**

**A two-column newspaper ad**

Dear Madam:

In adding the weight of our advice to the "Spend for the Home in 1932" idea, we do so with the feeling that the benefit to home owners will be a double one. There is the obvious advantage of greater comfort and convenience in the home; and there is the very real improvement in conditions which always follows upon any marked volume of home building or modernizing.

We offer our services, of course, in bringing the plumbing equipment in your home to the highest peak of efficiency and beauty--but this letter is written primarily to urge spending for the home, whatever the purpose.

In most homes there will usually be found a number of jobs which, if taken care of, would add comfort and convenience to the home. This is a particularly good time to have such jobs done, because prices are so much lower than they have been for several years.

From our own experience we should say that it will be a long time before you will have an opportunity to secure an extra bathroom, or to replace any of your present plumbing fixtures, at such a moderate cost. If you will just telephone we'll be glad to discuss the modernizing of your plumbing equipment--without obligation to you, of course.

Very truly yours,
HARRY BROWN

**A plumbing sales letter**

▲

**The copy on these two pages is for the use of readers of DOMESTIC ENGINEERING—without charge. If you wish to use the illustrations, they are sold at $4.20 for twelve—three months' service.**

**If you are using any of this copy, send us samples. We like to keep in touch with what our readers are doing.**

▼

## SPEND FOR THE HOME TO SPEED UP BUSINESS

"Over fifty industries will show improvement when the home building and home furnishings industries feel a demand," says Harry Brown, local plumbing contractor.

"That is why we are urging the idea of spending for the home this year—because when there is a strong demand for home building or remodeling, or for home furnishings, that demand immediately reflects itself in many of the other fields. It's a lot like the 'house that Jack built'—you buy something for the home, and the man from whom you buy it buys a suit of clothes, and the man who sold the suit of clothes buys some advertising for his business—and so on. It may be simplified economics, but that's the way it works. And if you're spending for the home you're making a good investment for yourself and for business in general."

**Hand this publicity item to your newspaper**

THE uncertainty of the weather in most sections of the country at this time should be made use of in selling appeal—as in the copy on this page.

A two-column newspaper ad

# When the Mercury Jumps Up and Down

**When, at this season of the year, the mercury registers large fluctuations in temperature—what happens in your home? Do you have to force your heating plant when the temperature drops—and then find that, as it rises, you've got too much heat? It happens in many homes, and the windows and doors are opened to "cool the house off" and to waste the heat. With a properly controlled heating plant, you come reasonably close to just making up the difference between the outside temperature and a comfortable warmth in your home. Whatever the fuel you use, it can be done. Just phone for details.**

**(In this space Your Name, Etc.)**

## Sudden Weather Changes

### *—how do they affect your home?*

DOES the temperature in your home fluctuate almost as much as that out of doors? Do you have to alternately force and check your heating plant—by hand and without automatic control? If so, you may be sure that you are wasting fuel. It's too difficult to know just the right moment to speed up or slow down a fire. If it's automatically controlled, changes in temperature determine changes in the working of the plant and you have an almost constant level of warmth in your living room. We'll be glad to explain—without obligation to you. Just telephone.

(In this space Your Name, Etc.)

A single column ad

## B.t.u's LEAVING MANY AMERICAN HOMES

"People can lose B.t.u.'s and never know anything about them," says Harry Brown, local heating contractor. "In hundreds of homes in this community the little B.t.u.'s are escaping—and as they escape they're costing owners money.

"A B.t.u. is to heat what the inch on a ruler is to measurements. It's a measure of heat, and the 'B' stands for 'British' because a Briton worked it out. So, these British thermal units are being wasted because heating plants aren't properly controlled. They go right on producing these heat units, and first thing you know there are too many of them around the house—so somebody opens a couple of windows, and that's just so much fuel that has been wasted. A properly controlled heating plant doesn't produce much more heat than is required to maintain a steady temperature in the home—and that means economy."

Give this publicity item to your local newspapers

## Your Window

**Window displays need change. If you have a permanent display of fixtures and equipment, make changes in lighting—use the free floor space for changed displays of accessories. Property owners who pass your window will never be particularly drawn to it if it remains the same in every detail for months at a time. Change—even small changes—is what draws attention to a window.**

Dear Sir:

Just now, with the weather uncertain and with fairly large fluctuations in temperature, you are probably having forced upon your attention a certain degree of discomfort in your home.

When it's mild, it's too warm. And when it turns a little colder and you force the fire a bit, ultimately you find you've made it too warm again. All that, of course, causes waste of fuel.

It's at these in-between seasons of the year that you'll most appreciate the advantages of controlled heat. Instead of having the discomfort of dampness and too little heat, or the other discomfort of too much heat, with an automatically controlled heating plant you'll have the necessary difference in outside temperature and comfortable warmth made up.

I'd like very much to go over your heating plant with you and to explain just what we can do to give you this heating comfort.

Aside from present comfort, there's the greater convenience throughout the heavy heating season, when these automatic controls work with the same efficiency to keep your rooms at just the temperature you require--and with the very minimum of attention from you.

If you'll telephone, I'll be glad to see you at your convenience.

Very truly yours, HARRY BROWN

A heating sales letter

THE C-D-S WATERPROOF GASKETS

READY TO USE — NO HEAT REQUIRED

LEAVES NO STAIN ON FLOOR

C-D-S

WATERPROOF FELT

CLOSET BOWL GASKET

THE big demand for the C-D-S Waterproof Felt Closet Bowl Gasket is proof of the plumbing trade's acceptance of this excellent product.

It is made by the Famous Peter E. Snow process and is absolutely water tight. It leaves no stain upon the floor and avoids the time-consuming use of less effective gasket materials.

Packaged individually with stud bolt gaskets, you can buy C-D-S Gaskets at your jobber's or write us direct.

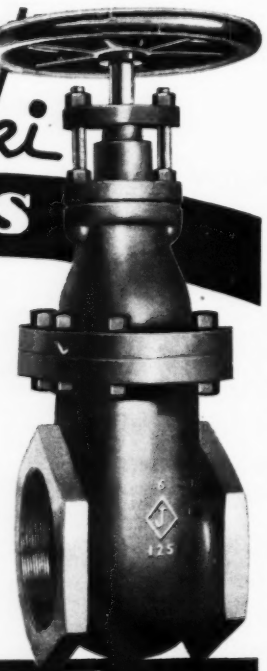
C-D-S PRODUCTS CORPORATION

Muncie : : : Indiana

THE C-D-S WATERPROOF GASKETS

Jarecki

VALVES




The ideals of the founder of the business, jealously guarded for more than 80 years by countless tests and inspections, put more than design and workmanship into Jarecki Valves. Every Jarecki Valve is tested under actual working conditions, but with pressures far beyond their ratings.

That is why it pays, especially in times like these, to standardize on Jarecki Valves and Fittings.

Jarecki

MANUFACTURING COMPANY

ERIE, PA., U. S. A.

# Convention Dates

**April 4, 1932**—NEW YORK H. & P. C.—The annual convention of the Heating and Piping Contractors New York State Association, to be held in New York City, with headquarters at the Hotel Pennsylvania.

**April 5, 1932**—MASSACHUSETTS—The annual convention of the Massachusetts State Association of Master Plumbers, to be held in Boston, with headquarters at the Hotel Statler.

**April 5 and 6, 1932**—NEW YORK—The annual convention of the New York State Association of Master Plumbers, to be held in New York City, with headquarters at the Hotel Pennsylvania.

**April 5, 6 and 7, 1932**—MICHIGAN—The annual convention of the Michigan State Association of Plumbing and Heating Dealers, to be held at Mt. Clemens, with headquarters at the Medea Hotel.

**April 6 and 7, 1932**—C. S. A.—The 108th regular meeting of the Central Supply Association, to be held at the Palmer House, Chicago. Executive Committee will meet April 5.

**April 11 and 12, 1932**—ARKANSAS—The annual convention of the Arkansas State Association of Master Plumbers, to be held at Little Rock, with headquarters at the Lafayette Hotel.

**April 11-16, 1932**—A. O. B. A.—The ninth annual convention and show of the American Oil Burner Association, to be held in Mechanics' building, Boston, Mass. Convention headquarters at the Statler hotel.

**April 18 and 19, 1932**—MISSOURI—The annual convention of the Missouri State Association of Master Plumbers, to be held in Kansas City, at the Muehlbach Hotel.

**April 18 and 19, 1932**—TEXAS—The annual convention of the Associated Master Plumbers of Texas, to be held in San Antonio, with headquarters at the Blue Bonnet Hotel.

**April 22 and 23, 1932**—LOUISIANA-MISSISSIPPI—The annual convention of the Louisiana-Mississippi Association of Plumbing and Heating Dealers, to be held at Mandeville, La., with headquarters at the St. Tammany Hotel.

**April 25 and 26, 1932**—GEORGIA—The annual convention of the Georgia State Association of Master Plumbers, to be held at Valdosta, Ga., with headquarters at the Gordon Hotel.

**April 25 and 26, 1932**—OKLAHOMA—The annual convention of the Oklahoma Master Plumbers Association, to be held at Enid, with headquarters at the Youngblood Hotel.

**April 26, 1932**—COLORADO—The annual convention of the Colorado Society of Sanitary and Heating Engineers, to be held at Denver, with headquarters at the Albany Hotel.

**May 2 and 3, 1932**—FLORIDA—The annual convention of the Florida State Association of Master Plumbers and Heating Dealers, to be held at Tampa.

**May 2 and 3, 1932**—TENNESSEE—The annual convention of the Associated Master Plumbers of Tennessee, to be held in Memphis, with headquarters at the Peabody Hotel.

**May 9, 10 and 11, 1932**—KENTUCKY—The annual convention of the Kentucky State Association of Master Plumbers, to be held at Frankfort.

**May 9, 10 and 11, 1932**—N. P. S. A.—The annual convention of the National Pipe and Supplies Association, to be held at Pittsburgh, Pa., with headquarters at the William Penn Hotel.

**May 13 and 14, 1932**—OREGON—The annual convention of the Oregon State Association of Master Plumbers, to be held in The Dalles, Ore.

**May 16, 17 and 18, 1932**—PENNSYLVANIA—The annual convention of the Pennsylvania State Association of Master Plumbers, to be held in Wilkes-Barre, with headquarters at the Mallow-Sterling Hotel.

**May 16, 17 and 18, 1932**—H. & P. C. N. A.—The 43rd annual convention of the Heating and Piping Contractors National Association, to be held at Detroit, Mich., with headquarters at the Book-Cadillac Hotel.

**May 23, 24 and 25, 1932**—CALIFORNIA—The 31st annual convention of the State Association of Master Plumbers of California, to be held at the Leamington Hotel, Oakland.

**June 2 and 3, 1932**—VIRGINIA—The annual convention of the Virginia Associated Plumbing and Heating Contractors, to be held at Alexandria, with headquarters at the George Mason Hotel.

**June 21, 22 and 23, 1932**—N. A. M. P.—The 50th annual convention of the National Association of Master Plumbers, to be held in New York City, with headquarters at the Hotel Pennsylvania.

**June 26-30, 1932**—A. S. H. V. E.—The semi-annual meeting

of the American Society of Heating and Ventilating Engineers, to be held in Milwaukee, Wis.

## COMING TRADE EVENTS

**March 17, 18 and 19, 1932**—The third industrial conference at Case School of Applied Science, Cleveland, Ohio. Air conditioning will be the topic.

**March 22, 23 and 24**—The first annual "Forced Warm Air Short Course," to be held at Michigan State College of Agriculture and Applied Science, East Lansing, Mich.

**March 28, 1932**—The annual dinner-dance of the Association of Master Plumbers of the State of Maryland, to be held at the Lord Baltimore Hotel, in Baltimore, Md.

**April 7, 1932**—The 59th anniversary dinner-dance of the Master Plumbers Association of the District of Columbia, to be held at the Shoreham Hotel, Washington, D. C.

**June 20, 21, 22 and 23, 1932**—Exposition of plumbing, heating and allied products, in connection with the 50th annual convention of the National Association of Master Plumbers in Madison Square Garden, New York City.

## Many Local Associations Elect New Officers

### JACKSON, MICH.

The Jackson Association of Plumbing and Heating Contractors recently elected the following officers for the year 1932: H. M. Reed, president; Joseph Riddle, vice president; C. M. Schlenker, secretary-treasurer.

### ELIZABETH, N. J.

The Master Plumbers, Steamfitters & Sheet Metal Workers Association of Elizabeth, N. J., has elected Joseph Arce to serve as president for the ensuing year. The other officers are: James F. Hardiman, vice president; F. C. Conkey, secretary; and George L. Bird, treasurer.

### NASSAU COUNTY, N. Y.

At the recent annual meeting of the Master Plumbers' Association of Nassau County, N. Y., John T. Tomilty was elected president of the organization. The other officers are: Joseph R. Riedman, vice president; William Jacobi, secretary; William Metcalf, treasurer; William Bloeth, financial secretary; trustees, William Kleb, August Ziminski and Charles Fritz, all of them past presidents of the organization.

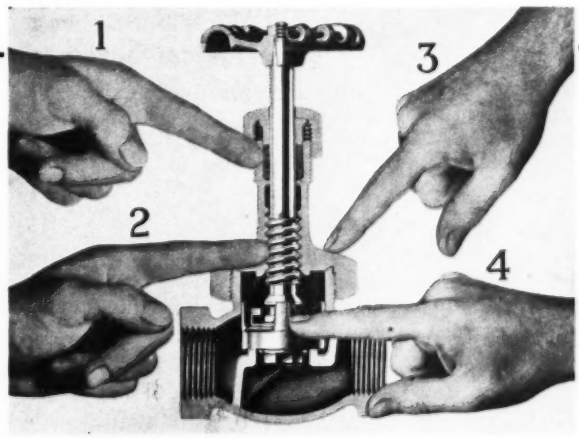
### EASTERN LONG ISLAND, N. Y.

All officers of the Master Plumbers' Association of Eastern Long Island, N. Y., were re-elected at the organization's recent annual meeting. The officers are as follows: George W. Robinson, president; Otto Simmons, first vice president; H. M. Sanford, second vice president and acting secretary; William R. Lucas, secretary; H. Nelson Smith, treasurer; John W. Robinson, sergeant-at-arms; and C. V. Mapes, marshal.

### STATEN ISLAND, N. Y.

The Master Plumbers' Association of Staten Island, N. Y., has elected Edward C. Sinker as its president for the ensuing year. The other officers are: Philip Beyer, vice president; Walter E. Heap, recording secretary; George F. Morris, financial secretary; John Missall, treasurer; and James A. Burns, sergeant-at-arms.


*Sectional view Fig. 106-A Jenkins Standard Bronze Globe Valve, Screwed. For 150 lbs. steam or 250 lbs. water working pressure.*




**1. Extra deep stuffing box**
**2. More spindle threads in contact**
**3. One-piece screw-over bonnet**
**4. Slip-on stay-on disc holder**

Strength dominates in this new Fig. 106-A Jenkins Standard Bronze Globe Valve. In the liberal proportions of the parts, in the generous quantity of metal, as in the uniform and skilful distribution of this metal, stamina and endurance are apparent.

The bonnet is a single solid piece. No chance here of any distortion or springing, even after the bonnet has been removed and replaced repeatedly. Generous hexagon faces provide a good grip for the wrench.

Then there is the slip-on stay-on disc holder. This, like the one-piece screw-over bonnet, is an exclusive Jenkins feature. It makes possible renewal of disc quickly, conveniently and safely.

Jenkins
BRONZE IRON STEEL
VALVES
Since 1864

A study of the sectional view above will reveal other advantages. Fig. 106-A and the corresponding valves in angle, cross and check patterns offer this extra value at no extra price. . . . . At your supply house. JENKINS BROS., 80 White St., New York, N. Y., 510 Main St., Bridgeport, Conn., 524 Atlantic Avenue, Boston, Mass., 133 No. Seventh St., Philadelphia, Pa., 646 Washington Blvd., Chicago, Ill., 1121 No. San Jacinto, Houston, Texas.

# ANSWERED

A few of the Questions of most general interest asked by readers and answered by our engineers

In this issue


**1—Plumbing System in Two-Family House Installed in Accordance with Local Plumbing Code. Kindly Point Out the Good Features and the Undesirable**

**2—A Problem of Heat Loss from Uncovered Pipe and Heat Saved by Covering Pipe**


## —1—

*To the Editor:*

This office is referring to you a controversy that has arisen concerning our local plumbing practice.

We are submitting a sketch (Fig. 1) which shows a two-family house plumbing system installed according to our local plumbing code, which demands that each trap be separately vented.

Without stating our own opinion or the opinion of those opposed to the ruling of the plumbing department, we wish you would thoroughly discuss the work, pointing out the good features as well as the bad. This will help us in reaching a satisfactory agreement.

Texas. C. P. G., Plumbing Inspector.

Without any hesitation we would say that Fig. 1 shows an installation which certainly is over-vented. Such a job as this can never be said to be insanitary, for it is protected more fully than it needs to be. That means that more expense is required to install the work than is warranted. Besides being sanitary, a plumbing installation should also be as simple as its effective operation will allow.

The chief extravagance in the matter of connections is to be found in the bathroom on the upper floor. Here every one of the three bathroom fixtures has been provided with its own separate vent.

Where top-floor bathroom fixtures are as closely grouped about the stack as these are, there is no difficulty in providing entirely safe connections, and yet without venting any one of the fixtures. Fig. 2 shows what we mean. Such a result can easily be accomplished by the use of any one of numerous makes of crowfoot fittings, or by use of a cast iron closet bend with a side inlet.

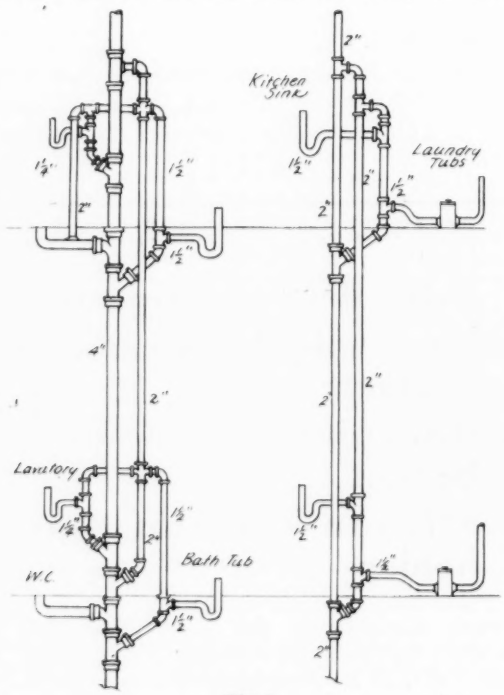



**Fig. 1**

We are aware that there are quite a number of cities in the country which insist on carrying out just such a venting program as shown in Fig. 1. Possibly this comes from a too literal interpretation of the demand in the plumbing code that each trap be separately vented. In the case of the six fixtures served by the bathroom

stack in Fig. 2, not one is individually vented, and yet we are firmly of the opinion that each one of the six fixtures is just as adequately protected against trap siphonage as the same fixtures are with the complicated venting of Fig. 1.

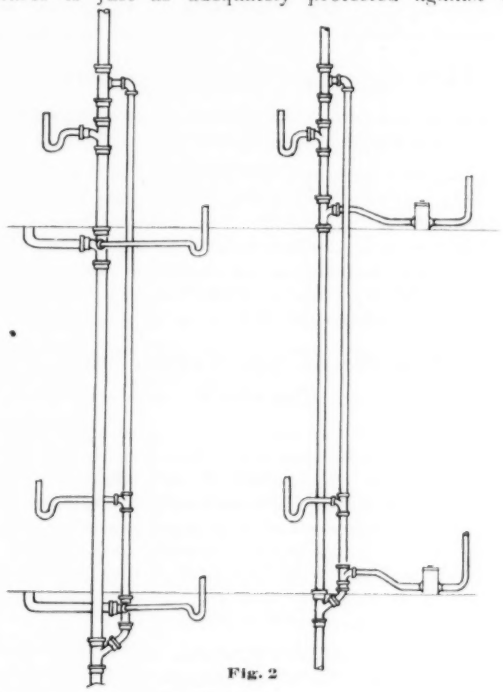


Fig. 2

Fig. 2 shows the work installed in about the simplest manner possible.

Many codes moreover, will now allow the use of 3-in. for bathroom stacks in all work connected with dwellings, and this is to be considered safe practice.

Regarding connections of kitchen sinks and laundry tubs, we think the first floor connections are O.K., but the second floor work can be simplified as seen in Fig. 2.

Not all will agree with us in saying a good word for the kitchen fixture connections.

Ordinarily we would be entirely opposed to wet-venting a set of laundry tubs through the sink connection. Such a connection apppears on the top floor in Fig. 1. However, if the work is done as in Fig. 2, we believe it will be entirely safe to make such a connection. We base this opinion on the fact that on both floors the connection of the two fixtures is into a 2-in. stack, and in our opinion this is safe.

As a general proposition, however, while we favor wet venting in the case of bathroom fixtures, when done in a correct way, we would not favor the wet venting of the laundry tubs in most cases.

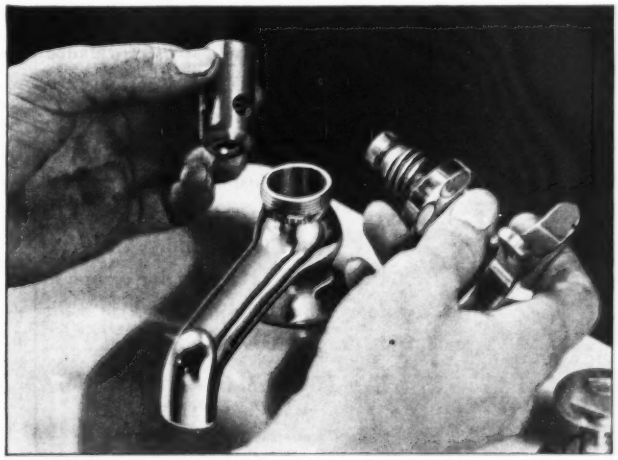
The venting of the lower water closet in Fig. 1 may be open to some question. While we much prefer the method of Fig. 2, still we are of the opinion that the 2-in. vent stack will be an effective vent for the water closet.

A comparison of Figs. 1 and 2 will serve to show the latter much the simpler, and equally as protective as Fig. 1. That being the case, our vote would be in favor of Fig. 2.


THE KOHLER

REMOV UNIT

BRINGS BACK OLD CUSTOMERS...
CREATES NEW ONES



*Seat and threads are combined in one piece, the Remov unit, easily replaced at a few cents cost*

HERE is another Kohler business builder in tune with the times—valves with Remov units.

What is more important in building up a business—and thereby greater volume and profits—than to sell products which give satisfaction?

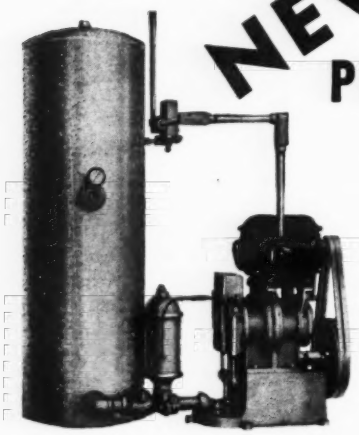
Kohler valves with Remov units make friends—bring old customers back to make other and larger purchases. And these old customers recommend you to their friends and *new* business comes in.

Kohler Remov units are regularly furnished on all Kohler Hospital valves, on all Kohler Octachrome valves, on virtually all Kohler Dynamic valves. In design, in accuracy of manufacture, in the quality of the real red brass, these are true Kohler fittings.

Kohler Co. *Founded* 1873. Kohler, Wis.—*Shipping Point*, Sheboygan, Wis.—*Branches in principal cities*. Look for the Kohler trade-mark on each fixture and fitting.

KOHLER OF KOHLER
PLUMBING FIXTURES AND FITTINGS

WORKS ON NEW PRINCIPLE



Dorward-Red Jacket Water Systems have power heads operating on a new, thoroughly tested principle. A Straight Line Motion is produced within the head. Every moving part turns a complete cycle, without noise, without vibration, with practically no wear . . . There are few working parts — no rods, pins, walking beams. Replacement of parts is almost unknown. With few parts and rotary action, there is greater capacity for the power used, with accompanying economy . . . No other system equals Dorward-Red Jacket Power Heads in performance . . . Dorward-Red Jacket Systems are now used for Residences, Farms, Country Homes, Schools, Hotels, Apartments, Hospitals, Summer Resorts, Tourist Camps — wherever a water system is desirable . . . Write for Catalog No. 11 containing complete information. Become familiar with this proven, this better system.

*Capacities 200 to 10,700 gallons per hour. Compact, low down, perfectly machined, all moving parts enclosed and running in baths of oil.*

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*Manufacturers of Pumping Equipment for More than 50 Years.*

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WATER SYSTEMS


# Questions Answered and Discussed by Readers

## How the Question Was Answered

The following question was asked in the issue of February 20, and the accompanying answer is by a reader:

*An uncovered steam line in a building at 70 deg. Fahr. is 50 ft. long and carries steam at 5 lb., gauge pressure. What is the value of the heat lost per heating season of 200 days of 12 hrs. each, if the coal has a Btu. value of 13,000, costs $6.00 per ton and the average overall efficiency of the boiler plant is 60 per cent? What would be saved by covering the line?*

## How Would You Answer This Question?

*On a roof covering an area of 100 ft. x 200 ft., the roof drainage is arranged so as to be taken care of by 10 roof leaders each of which drains an approximately equal portion of the roof. If the maximum recorded rainfall for any five minute period is at the rate of 6 in., per hour, and all the leaders are connected into a single drain, what should be the size of the leaders and what should be the size of the drain after all leaders are connected if the drain has a pitch of ¼ in., per ft.?*

Answers based upon your experience, and suitable, will be paid for and published in the April 16 issue.

—1—

IN FINDING the answer to this problem two results must be secured these being, first, the cost of the heat loss in the pipe's present uncovered condition and, second, the loss which would occur if the pipe were provided with a covering having a reasonably high efficiency of, say, 70 per cent for example. The first result is the total cost of all the heat lost from the line and the second result is the cost of the loss that would occur with a covered line. The difference between these two results represents, of course, the saving which would be effected by covering the line. The basic thing to settle is how much pipe surface is involved and this may be done by taking the outside circumference of the pipe in feet and multiplying it by the length of the pipe in feet which will give the square feet of surface on the outside of the pipe.

This is done as follows:

Outside circumference of a 2-in. pipe... 7.46 in.
or, 7.46 in. / 12 which is ..... 0.622 ft.
and, multiplying by the length of 50 ft..31.1 sq. ft.

Various experiments with piping indicate a heat emission with steam on one side and air on the other of about 2.4 Btu. per sq. ft., per degree temperature difference per hour. So the next thing is to ascertain the temperature difference of the steam in the pipe and the air surrounding the pipe which is

Temperature of steam at 5 lb.....227 F.
Temperature of the air ..... 70 F.

Temperature difference .....157 F.

so that the heat emitted from the pipe for one sq. ft. of external surface will be about

2.4 Btu. × 157 or .....376.8 Btu.

and the total heat loss per hour by the bare line will amount to

376.8 Btu. × 31.1 sq. ft. or .....11,718.48 Btu.

In order to find the total Btu. lost in the entire heating season this hourly loss must be multiplied by the number of hours in the heating season during which the loss goes on and this number of hours will be the total number of the days when steam is on multiplied by 12 hours per day. This gives

12 hrs. × 200 days.....2,400 hrs.

and the total Btu. lost per season then will be

11,718.48 Btu. × 2,400 hrs., or....28,124,352 Btu.

Now a ton of coal with 13,000 Btu. when burned in an apparatus having 60 per cent overall efficiency will transmit to the water or steam

13,000 Btu. × 60 per cent or 7,800 Btu. per lb. of coal which is

7,800 Btu. × 2,000 lb., or 15,600,000 Btu. per ton. So that the number of tons of coal which will be required to supply the heat loss from the line when the pipe is uncovered will be

28,124,352 Btu. / 15,600,000 Btu. or 1.80 tons

and at $6.00 per ton this will amount to

$6.00 × 1.80 or $10.80 per year.

With the steam line covered so as to conserve 70 per cent of this loss, the number of Btu. lost per season will be

28,124,352 Btu. × 30 per cent or 8,437,305 Btu.

and changing this into tons of coal when 15,600,000 Btu. are received from each ton gives

8,437,305 Btu. / 15,600,000 or 0.54 tons of coal

and 0.54 tons of coal at $6.00 per ton is $3.24 cost of the heat lost with insulation on the line. This may be proved by simply multiplying the cost of supplying the heat for the line uncovered by 30 per cent the amount of this heat still radiated after the line is covered and this will give the same result, thus:

$10.80 × 30 per cent or $3.24

The saving which will be effected by the installation of covering is the difference between the amount when the line is uncovered and the amount when the line is covered or

| | |
|---|---|
| Cost uncovered ..... | $10.80 |
| Cost covered ..... | 3.24 |
| Saving per season ..... | $ 7.56 |

A small offset against the above saving would be the item of overhead and maintenance on the covering which usually is taken as being in the neighborhood of 10 per cent of the initial cost of installation. No attempt has been made to consider this in the above figures.

### A CORRECTION

S. P. Ainslie, plumbing and heating contractor of Johnson City, N. Y., has been awarded the plumbing contract on the new Central School building in Marathon, N. Y. It was erroneously stated in our issue of March 5 that the contract for the plumbing on this building had been awarded to another contracting firm.


**Let KOVEN solve your TANK problem!**

"KOVEN" offers you its complete . . . co-ordinated, facilities:

- ENGINEERING - to specify your requirements.
- MANUFACTURING — to substantially build according to specification.
- SERVICING—wherever it is required.

***This Service Covers:***

HOT WATER STORAGE TANKS
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GASOLINE TANKS
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TANKS BUILT KNOCK-DOWN and WELDED ON THE JOB

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U. S. GOVERNMENT SPECIFICATION TANKS
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SPECIAL HEAVY TANKS BUILT TO ½" THICKNESS

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**"KOVEN" PLUMBERS' HANDBOOK**

Write for free copy of Handbook giving Specifications, sizes, weights, capacities, etc., of every KOVEN product. A valuable reference book.

***Other KOVEN Products:***

*Range Boilers*
*Storage Tanks*
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TRADE MARK
L.O.K. & BRO. INC.

*Expansion Tanks*
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*Barber Boilers*
*Scullery Sinks*

•

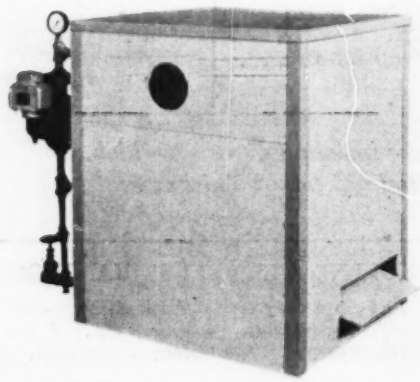
**L. O. KOVEN & BRO., Inc.**
**154 Ogden Avenue**
**JERSEY CITY, N. J.**

# *Items for* STORE, SHOP *and* JOB

A FEW days ago, a conference was held under the direction of the American Society of Sanitary Engineering, at the United States Bureau of Standards. Sanitary engineers and manufacturers met to work out improvements. This is just one of the many efforts being carried on to promote better items for your store, shop and job. These columns reflect improvements which have been brought to completion.

### NEW AND IMPROVED FEATURES FOR GAS BOILER

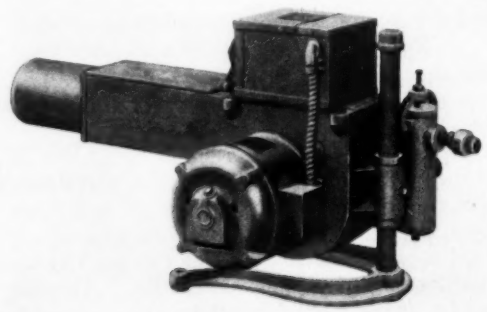
Late last year, a gas boiler was placed on the market. It was designed to include both new and improved features. The air which is used for combustion is preheated. In addition, the air control door automatically closes when the gas is turned off. It is stated the reason for this is that it prevents the boiler from cooling rapidly. The drafthood has been located so that cold air



for checking the draft and for providing against the effect of backdraft on the burners, is taken from the floor line. It is stated that when condensation occurs, it is dripped to the cellar floor. Also, the arrangement has been designed to reduce headroom requirements. The average sized boiler is shipped in one block or section. Little headroom is said to be required and the water line is listed as being 34 in. including jobs up to 5,000 sq. ft. of steam radiation. All of the controls are enclosed in a baked crystal finished jacket which is designed so that any panel or top can be removed without interfering with the piping or controls. The boiler has been tested, rated and approved by the American Gas Association. It is manufactured by Dunkirk Radiator Corp., Dunkirk, N. Y.

### NEW DESIGN IN OIL BURNER

Announcement has been made of an oil burner which is said to be new in design. It was shown for the first time at the second annual heating and ventilating exposi-



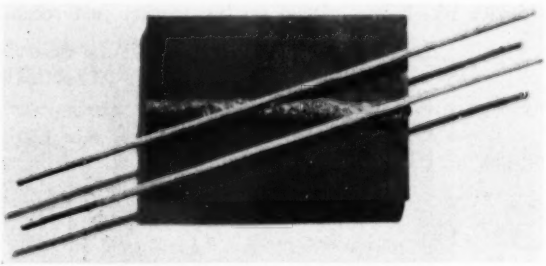
tion recently held at Cleveland. The burner may be equipped with either gas or electric ignition and carries the Underwriters' Laboratories approval listing it as standard. The manufacturer is Century Engineering Corp., Cedar Rapids, Iowa.

### NEW WELDING ELECTRODES PLACED ON MARKET

A new welding electrode has been placed on the market within the last month. It has been designed to provide a high speed, heavy coated electrode having a low spatter loss. Listed as distinctive features are the following: It permits of quiet operation with little or no sputter during the welding process; the grain structure of the deposit from the electrode equals that of the boiler plate metal; it provides penetration and ductility; high speeds are obtained with either straight or reverse polarity and the coating adheres firmly to the electrode.

*Readers will find in this department news of our industry's progress in the manufacture of equipment. You can read of the efforts of manufacturers to develop products which will increase customer demand, will make shop methods more efficient and will simplify installation.*

It is pointed out that the usual practice of the welder is to bend the electrode and that in so doing with this one, while the coating will crack, it will not fall off, thus the



weldability of the electrode is not effected. Also, it is stated that the item is moisture proof or in other words does not absorb moisture from the air. The manufacturer is Page Steel & Wire Co., Bridgeport, Conn.

### VENT AND FLUE PIPE FOR GAS INSTALLATIONS

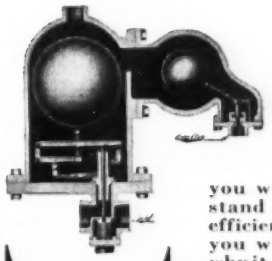
Pipe and shapes for gas vents and flues have been placed on the market. The accompanying illustration shows the line of round fittings. An additional variation comes in the form of oval pipe and shapes. The line was designed to meet the need for gas venting material having insulating characteristics and resistance to the destructive action of the acids formed by the condensation of products of combustion. The material is made by rolling layers of sheet asbestos which are bonded and sealed by a cement. A laminated construction with a thickness of about ¼ in. results. The oval fittings come in both flat and side shapes. Condensation in gas vents

and flues occurs when the warm and moist waste gases come in contact with cold surfaces. When the flue has heat insulating qualities, naturally the inner surface in contact with the flue gases becomes warmer than otherwise and condensation is reduced. The line is manufactured by Plant Rubber & Asbestos Works, San Francisco, Calif.


BECAUSE IT SERVES LONGER AND BETTER

that's why it pays to install
KIELEY & MUELLER
DUPLEX WATER FEEDER

30 YEARS IN USE
K & M Specialties Installed in the Marbridge Bldg., New York in 1902



SIMPLE in design and operation—backed by fifty-three years' experience in the manufacture of Engineering Specialties—priced to meet the requirements of the 1932 pocketbook. No wonder the K & M Duplex Water Feeder has won such widespread acceptance. No wonder this automatic boiler feeder is found in so many public buildings and private dwellings.

Note the simplicity of its removable valve seat and disc—its high capacity feed and direct flow. Then you will understand its superefficiency. Then you will realize why it insures utmost safety and most efficient operation on any boiler.

K & M Engineering Specialties installed ten, twenty and thirty years ago are still delivering unfailing performance. Doesn't this record speak for itself? Isn't it all the more reason for installing K & M Duplex Water Feeders? Descriptive literature upon request. Write or telephone Kieley & Mueller, Inc., 34 West 13th Street, New York, N. Y.

Cross & Cross Architects
•
Clyde R. Place Cons. Engrs.
•
A. L. Hartridge Genl. Contr.
•
Hubbard & Lange Heating Contr.

K & M Specialties in the RCA BUILDING

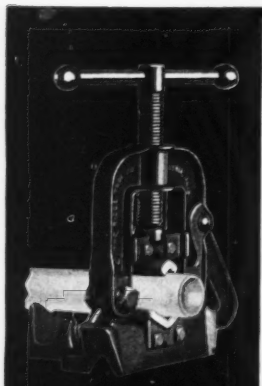
KIELEY & MUELLER INC.
ENGINEERING SPECIALTIES

ARE YOU GOING TO "CASH IN" ON THIS SUMMER'S HEAT?

Last year—portable showers were in great demand—everyone wanted to "cool off" quickly.

Our new line of *"Milwaukee portables"* is now ready—at prices that *defy competition.* We suggest writing for Bulletin No. 32 mentioning your jobber's name.

MILWAUKEE FLUSH VALVE CO.
MILWAUKEE, WIS.



RIDGID VISES

NO-MAR Jaws on RIDGID Yoke Vises . . . Pipe rests and pipe benders on *all* RIDGID Vises . . . Strength enough to stand many years of hard work and abuse. At your Jobber's. Made also in stand, Post chain and yoke type, all sizes.

THE RIDGE TOOL CO.
Elyria Ohio

Dart Unions

Taken apart, a Dart Union reveals the "innards" that have made its constant success—the TWO BRONZE TO BRONZE SEATS. Because of these two bronze seats, Darts will give a lifetime of service on the pipe line on which they are installed.

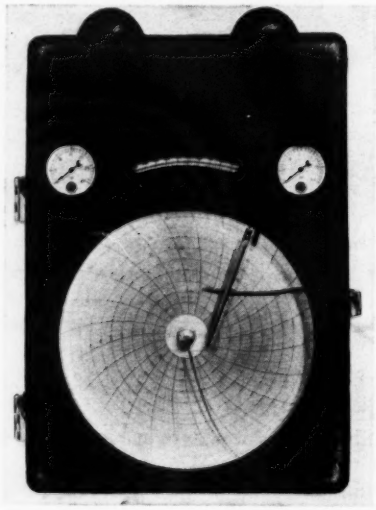
E. M. DART MFG. CO.
Providence, Rhode Island
Sales Agents:
The Fairbanks Co., New York Branches
Canadian Factory:
Dart Union Co., Ltd., Toronto, Can.

QUALITY SPRINKLER DRAINAGE FLANGED AND STEAM FITTINGS

SEMLER COMPANY
JEANNETTE-PA.
SURE FIT FITTINGS

## A PRESSURE RECORDING CONTROLLER

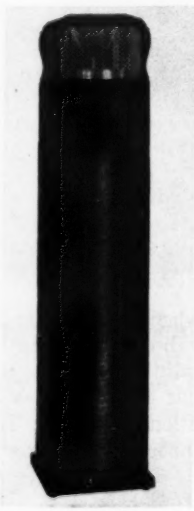
News of developments in the field of recording pressure control instruments comes in the announcement of a device which was placed on the market just recently



and which, among other items, is said to be quickly synchronized with the speed of any process. Also, it is said to supply the straight line function which means that for every increment of movement of the control element there is a definite and uniform increment of movement of the diaphragm control valve. The operating air reservoir is built in; it contains a balanced compound safety valve; it is converted easily from reducing to back pressure service and unit construction has been designed to facilitate repairs or replacements. The manufacturer is the Mason Regulator Co., Boston, Mass.

## PORTABLE AIR CONDITIONING UNIT ANNOUNCED

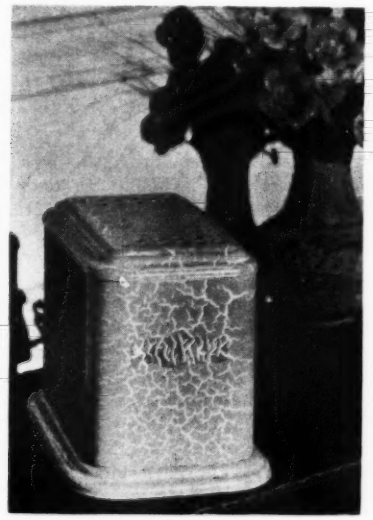
Announcement has just been made of a portable air conditioning unit which has been designed to both ozonize and humidify air. It has a water storage capac-



ity of 17 gallons and may be made completely automatic when operated in connection with a hygrostat. The item occupies one sq. ft. of floor space when installed. It is manufactured by General Regulator Corp., Chicago, Ill.

### OZONING DEVICE INTRODUCED ON MARKET

Announcement has been made of an ozonizing device which just recently has been placed on the market. It is rated as being capable of taking care of the require-



ments of 20,000 cu. ft. of space. It measures 7 in. by 7½ in. by 5 in. and weighs 7½ lb. The manufacturer is Interstate Electric Co. located at St. Louis, Mo.

### BLOWER FOR VACUUM CLEANING BINS

An announcement has just been made of a new blower for vacuum cleaning bins and stock rooms, for blowing dust out of motors and machinery parts and for spraying. The item is portable and is rated as being capable of developing the equivalent of a 20-in. water

lift. The weight is listed as being 7 lb. It was placed on the market by Breuer Electric Mfg. Co. of Chicago, the manufacturer.

### JACKSON, MISS., ASSOCIATION ELECTS OFFICERS

The Association of Plumbing and Heating Dealers of Jackson, Miss., recently elected J. P. Davis, president, and H. A. Harwell, secretary-treasurer.


*The* FINEST *of*

Enameled Iron Water Closets, Hoppers, Traps, Tanks and Plumbers' Specialties

Made by

**JONES HOLLOW WARE CO.**

*Established 1888*

**BALTIMORE » MARYLAND**

WRITE *for* PRICES

**IT'S THE WORK ...NOT THE SALES TALK**

THE WRENCH WITH THE ANGLE HANDLE

**U. S. HAME COMPANY**
BUFFALO, N. Y.

**Try the new and improved USHCO Lawson Wrench! It out-performs any other wrench on the market. Its patented principle and the angle handle make it definitely a better wrench.**

*Our folder gives the details and specifications on these wrenches. It is Free. Write for it now.*

**TABER SUMP PUMPS IN GENERAL USE**

Built for 5 ft. pit. Single and Duplex Units

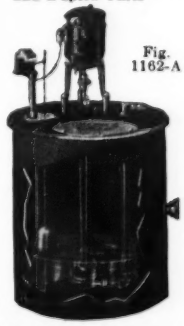


Fig. 1162-A

Sold with and without tank

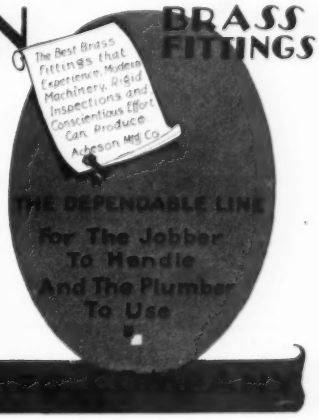
The larger Taber Sump and Sewage Pumps are being specified and used on jobs requiring high grade equipment. Following are single unit sizes in general use. . . . 1750 R.P.M. 60 Cycle and Direct Current.

| Type | G.P.M. | Head | Outlet,in. | Plate in. | H.P. | Wgt. lbs. |
|---|---|---|---|---|---|---|
| AL-25-2 | 25 | 20 | 1 | 24 | ½ | 272 |
| AL-50-2 | 50 | 20 | 1¼ | 32 | ¾ | 350 |
| AL-75-2 | 75 | 20 | 1½ | 36 | 1 | 436 |
| AL-100-2 | 100 | 20 | 2 | 36 | 1½ | 481 |
| AL-150-3 | 150 | 20 | 2½ | 36 | 2 | 607 |
| AL-200-3 | 200 | 30 | 3 | 36 | 3 | 675 |
| AL-300-3 | 300 | 30 | 4 | 36 | 5 | 772 |

Write for complete Bulletin SS-629

**TABER**
TABER PUMP CO *Est 1859*
Taber Pump Co., 290 Elm St., Buffalo, N.Y.

**ACHESON BRASS FITTINGS**


The Best Brass Fittings that Experience Modern Machinery, Rigid Inspections and Conscientious Effort Can Produce
Acheson Mfg. Co.
THE DEPENDABLE LINE
For The Jobber To Handle
And The Plumber To Use

# New Trade Literature

**Announcing a New Vacuum Heating System**

Sarco Company, Inc., of New York City has issued a 6-page announcement of its new vacuum heating system which is designed to furnish, entirely automatically, just sufficient heat to maintain a chosen indoor temperature, either in an entire building, or in one of a number of zones. Each zone can then have a different temperature. The system operates with a positive pressure on the supply side of the radiators, which may be a few ounces or several pounds without affecting the economy of operation.

**New Decorative Principle Applied to the Bathroom**

A new decorative principle applied to the complex problem of the modern bathroom is explained in detail in a 20-page booklet, 9 x 9½ in., which has just been issued by the Standard Sanitary Manufacturing Co. of Pittsburgh, Pa., under the title of "Neo Classic." New styles of lavoratories, bathtubs, water closet combinations, fittings and accessories are illustrated and described in detail. The illustrations are in two colors and very exquisite, making this booklet one of the daintiest we have seen for some time.

**Catalog of Electric Steam Generators**

General Electric Company of Schenectady, N. Y., has issued a 16-page catalog, 8 x 10½ in., describing and illustrating its electric steam generators, which are designed for generating high- or low-pressure process steam. These generators are of the water-immersion type and consist of a suitable steel container in which one or more helicoil sheath-wire immersion heaters are inserted. Each of these generators is provided with standard boiler fittings—a safety valve, steam gauge, water column, blow valve, steam valve, etc. The value of this catalog is enhanced by the addition of tables of capacities, dimensions and weights.

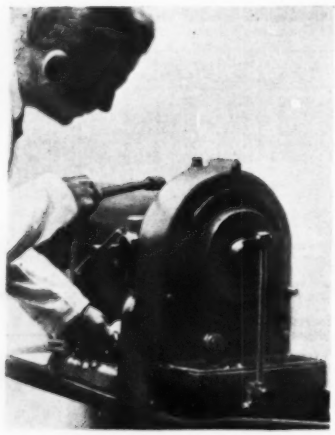
**Catalog of Registers and Ventilators**

Independent Register & Manufacturing Co. of Cleveland, Ohio, has just issued its Catalog No. 32, consisting of 48 pages, 6 x 9 in., and containing illustrations and descriptions of its line of registers, grilles, adjustable ceiling and wall ventilators, forced air registers, floor borders, etc., with or without finishes. The finishes covering the usual requirements are: Black and white Japan, imitation oak enamel, lacquer, and the following electro-plated finishes: Oxidized copper, nickel, brass, bronze, chromium and cadmium. Other finishes can be furnished as desired.

**Automatic Gas-Steam Radiator Co.'s Catalog**

Automatic Gas-Steam Radiator Co. of Pittsburgh, Pa., has issued a 32-page catalog, size 8½ x 11 in., featuring its gas-fired unit heaters and automatic gas steam radiators. Its unit heaters need no boiler or steam mains and are designed for either manufactured or natural gas for use in machine shops, mills, factories, warehouses, garages, service stations, stores, industrial or commercial buildings. Its gas steam radiators are made of cast iron, built in sections, and assembled with malleable iron push nipples, making a tight iron-to-iron joint. They are manufactured in vented and non-vented types for either natural or artificial gas, automatically controlled by steam pressure to regulate the gas flame. Each unit is a complete steam radiator in itself. These radiators are designed for the heating of houses, apartment buildings, offices, stores, factories, churches and schools. They are also designed for auxiliary heating.


For any thread job!



11 big features

Low price
Repays initial cost.
Light but rugged.
Easy to transport.
Quick in operation.
No skill needed.
Operates on 110-volt.
½ h. p. G. E. Motor
Reversible power.
Cuts threads ½ inch up.
Dies, cut-off and reaming attachments furnished.

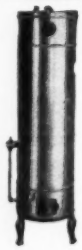
HERE is a brand new idea in portable threaders. With the cut-off and reaming attachments that are furnished and with the drive shaft threading attachment which may be purchased at slight additional cost, pipe larger than 2 inches may be satisfactorily threaded. This threader cuts clean even threads on copper, lead, cast iron, steel,—in fact any metal pipe.

*Write for details*

AXELSON MANUFACTURING CO.
P. O. Box 710, Vernon Station, Los Angeles, Calif.

AXELSON portable THREADER

NEW—



DAHLQUIST

COPPER BOILER PATENTS CUT HOT WATER COSTS

When installing new hot water service equipment, whether for large industrial boilers or household units, Dahlquist Copper Boilers with their low first cost have patented fuel saving features found in no other make of copper boilers.

Exclusive Patented Features

*Dahlquist Aquatherm U.S. Patent No. 5065050* — *This Dahlquist patent makes a common range boiler also an instantaneous water heater because when connected to a range boiler it will deliver hot water to the kitchen sink quicker than water can be heated in a tea kettle—The Aquatherm can be had with all Dahlquist Boilers.*

*Dahlquist Super-Aquatherm U.S. Patent No. 1648043* — *This Dahlquist patent makes a direct or under-fired automatic gas storage system an instantaneous water heater as well. Therefore, when only a small quantity of hot water is required, for instance after each meal, the expense for fuel is exceedingly small—The Super-Aquatherm is standard equipment in all Dahlquist Copper Automatic Storage Systems.*

*Dahlquist Turbo U.S. Patent No. 1762215* — *This Dahlquist patent fitted in any boiler or automatic storage system will absolutely prevent the accumulation of sediment in the bottom of the boiler and your supply of hot water will always be as fresh and clean as that in the cold water line—furthermore, the danger of burnout is eliminated.*

If you are in the market for a copper hot water boiler you will want to know more about these advantages found only in Dahlquist Boilers—Write at once for full information about Dahlquist 25-year guarantee—Dahlquist patented features and attractive low prices.

DAHLQUIST MFG. COMPANY
60 W. 3rd Street » » So. Boston, Mass.

# Business Changes

**St. Joseph, Mo.**—Barber & Neely Plumbing and Heating Co. of this city, has moved into new quarters at 110 South Fourth street.

**Needham Heights, Mass.**—Harding & Pearson, 1593 Washington street, West Newton, Mass., have purchased the plumbing and heating business of the Henry Thomas Co. at 78 West street, Needham Heights. The firm's headquarters will be maintained at 78 West street.

**Macon, Mo.**—The Macon Plumbing and Heating Co. of this city passed into new hands on March 1. The new proprietors, J. W. Fitzpatrick and Ernest Clarke, are both well known in Macon as a result of having worked in local plumbing shops for a number of years.

**St. Joseph, Mo.**—The Donegan Plumbing and Heating Co., of this city, is now doing business from its new quarters at 113 South Fourth street.

**Seattle, Wash.**—Harry Cook has sold his interest in the firm of Ashwell, Twist & Cook, the company now being known as Ashwell & Twist, Inc.

# New Contractors and Incorporations

**Glendale, Calif.**—Cordis & Striplin have engaged in the plumbing and heating business at 28 South San Fernando road, under the ownership of W. H. Cordis, 3029 Piedmont avenue, Verdugo City, and D. Earl Striplin, 1918 Academy Place, Glendale.

**San Francisco, Calif.**—The Polk Hardware & Plumbing Co., of which Frank Hinkelbein is manager, has moved from 1650 to 1649 Polk street.

**Detroit, Mich.**—The Monica Plumbing & Heating Co., Inc., has been chartered, with a capital stock of $15,000, of which $10,000 has been subscribed and paid in. The company is located at 7301 Fenkell avenue.

**Minneapolis, Minn.**—The Endure Company, Inc., has been chartered, with a capital of $50,000, to deal in heating and plumbing apparatus, by George F. Girrbach, 5207 Humboldt avenue S, Margaret C. Girrbach and Elsie E. Gustafson.

**Sioux City, Ia.**—Articles of incorporation have been filed with the secretary of state by the Larsen Brothers Co., to do a general plumbing business in Sioux City. The concern is capitalized at $10,000. Albert C. Larsen is president.

**San Francisco, Calif.**—J. D. Marrs has engaged in the plumbing and heating business at 1065 Bush street.

**Walker, Minn.**—Edward Oehler has engaged in the plumbing and heating business here.

**Los Angeles, Calif.**—Poole & Coleman have engaged in the plumbing and heating business at 4767 South Broadway under the ownership of Howard S. Poole and Thomas G. Coleman.

**Detroit, Mich.**—The Glasier Plumbing & Heating Co., 34832 Fenbell avenue, has incorporated its business under the name of E. Glasier & Sons, Inc., with a capital stock of $1,000.

**New York City**—C. Spaet and associates have chartered the firm of C. Spaet, Inc., with a capital of $10,000, to establish and operate a general plumbing business. G. Jacobs, 10 East Fortieth street, represents the new concern.


The Sensation of the Industry

A NEW Flush-Valve Closet with these outstanding advantages:

WORKS ON 12 GALLONS PER MINUTE
Instead of 30 to 40 gallons per minute

WORKS ON ½" OR ¾" BRANCHES
Instead of 1" and 1¼" Branches

USES ONLY 2½ GALLONS OF WATER
Yet flush is copious and strong

PRACTICALLY SILENT IN ACTION
The quietest flush-valve closet made

UNUSUAL IN CLEANLINESS

Patented and Patents Pending

A "Murdock" Quality Product for
PRIVATE HOMES
as well as for Larger Buildings

*Write for Details and Prices*

THE MURDOCK MFG. & SUPPLY CO.
CINCINNATI, O.
1853-1932

The "Murdock" Alternater Closet

LEONARD
Water Mixing
VALVES

Set the Temperature Indicator, and the thermostatically controlled Leonard Valve immediately proceeds to render satisfaction.

Whether your requirement be hot water of 80, 90, 100 or 120 degrees, the Leonard functions with constant perfection. Leonard Valves are also furnished with special temperature markings.

*Write. We will tell you the story.*

MANUFACTURED BY
LEONARD-ROOKE COMPANY
INCORPORATED 1913
PROVIDENCE, RHODE ISLAND

# What Women Are Doing

## OAKLAND GROUP MARKS BIRTH OF GEORGE WASHINGTON

Plumbers Hall, Oakland, Calif., was the scene of what in many respects was one of the most successful meetings of the ladies auxiliary, when the members gathered for their luncheon meet on February 15th. A delicious luncheon was followed by a brief business session, but not too brief to indicate a well sustained interest in auxiliary affairs as well as a steady growth in the membership. The afternoon of whist yielded high scores for Mesdames James F. Mauzy of Walnut Creek, and Richard Spiersch, W. H. Timmons and Ollie Rhin of Richmond. Two important committees were chosen for the current year, Mrs. J. W. Rankin heading the Sunshine Committee whose chief duty it is to call on the sick, while Mrs. R. W. Timmons, Mrs. B. F. Schullerts and Mrs. Dwight W. Durant constitute the group who handles all arrangements for holding out-of-town luncheon meetings.

A distinctive feature of the recent meeting was the appropriate decorations—tastefully draped flags and well placed likenesses of George Washington in which were depicted the five outstanding episodes of his career.

A gay luncheon and card party featured the January 18 meeting of the Oakland auxiliary when the ladies gathered for their annual installation ceremony.

Installation ceremonies took precedence over all other activities, the president rendering an appropriate address of acceptance on behalf of herself and fellow officers. This year the entire official body was re-elected and consists of Mrs. W. D. J. Evans, president; Mrs. Marie Johnson, vice president; Mrs. W. H. Picard, secretary; Mrs. Adele Morse, treasurer, and Mrs. Lola Zeis, marshal. A delicious luncheon was served following the induction of officers, after which the ladies enjoyed a delightful afternoon of whist. Those having high scores were Mesdames Harry G. Newman, W. H. Picard, Carrie Spiersch and Harry Le Gassick. Three new members—Mesdames H. P. Sheridan, Lester Jackson and James F. Mauzy—were initiated.

The committee responsible for the success of the affair, including the preparation and serving of the luncheon, was headed by Mrs. R. W. Timmons, assisted by Mrs. W. H. Timmons, Mrs. Carrie Spiersch, Mrs. Richard Spiersch, Mrs. Nellie Collins and Mrs. Ollie Rihn.

## NEW OFFICERS ELECTED AT TRENTON, N. J.

The Trenton, N. J., Women's Auxiliary met recently at the home of Mrs. George Hughes to elect officers for the ensuing year. Mrs. John Conard is now president; Mrs. Thomas Kerwick, vice president; Mrs. William J. Lee, secretary, and Mrs. Charles MacQueen, treasurer. Trustees consist of Mrs. George Hughes, Mrs. Frank Dunn and Mrs. Emil Pfleider. Mrs. John Mackey, who has just been elected sergeant-at-arms, and entertained her auxiliary two days previously, died at her home at Westover, Pa. Mrs. Mackey was always interested in auxiliary affairs and was a charter member of the Trenton auxiliary. Her passing is deeply regretted by the members of the auxiliary.

## NORTH SHORE AUXILIARY ELECTS NEW OFFICERS

North Shore (Ills.) Plumbing Contractors' Women's Auxiliary held an enthusiastic meeting recently and elected Mrs. Mergenthaler, president; Mrs. Flader, vice president; Mrs. Chester, treasurer, and Mrs. Kearney, secretary, for the ensuing year. The meeting was held at the home of Mrs. Flader and the business session was in charge of Mrs. Mergenthaler. Mrs. Mergenthaler appointed the following committees: Entertainment, Mrs. Flader, chairman, assisted by Mrs. Moore and Mrs. Killian. Visiting committee: Mrs. Steffens and Mrs. Flader.

The auxiliary met at the home of Mrs. Harry Hagen on January 21. Reports of the charity work done during the holidays was a source of gratification to each member. A committee, comprised of Mrs. Hagen, chairman, assisted by Mesdames Chester, George Moore, O'Malia, Kearney H. Moore, Krecji, Butow and Miss Schmeisser, was appointed to plan for the party held on Saturday, January 30.

Following the meeting, bridge and bunco were played with Mrs. Kearney, Mrs. Stegens and Mrs. Chester taking honors at bridge and Mrs. George Moore, at bunco.

## NEW JERSEY GROUP MEETS

On February 9, the Women's Auxiliary to the Montclair, Bedford and Vicinity Master Plumbers Association met at the Knights of Pythias Hall, Bloomfield, N. J. There were eleven members in attendance, with Mrs. Ernest and Mrs. Blodgett hostesses. The officers of this auxiliary, for the coming year are president, Mrs. A. Kievit, Montclair; vice president, Mrs. A. Ernest, Irvington; secretary, Mrs. James Fitzgerald, Montclair; treasurer, Mrs. Henry Williamson, Montclair; sergeant-at-arms, Mrs. G. Garritson, Upper Montclair. The trustees are Mrs. Harry Burnett, Bloomfield, Mrs. J. Blodgett, Glen Ridge, and Mrs. S. Helwig, Upper Montclair.

After the meeting, refreshments were served. The next meeting will take place at the same place on March 15.

## GERMANTOWN AUXILIARY MEMBERS ENTERTAIN

On January 5 the Ladies Auxiliary of Germantown, Pa., entertained their husbands at Waterview Recreation Center with a sauerkraut supper.

The December meeting of the auxiliary was held at the same place, with eleven members in attendance. Coffee and sandwiches were served by the hostesses, Mrs. McDermott, Mrs. Neilson and Mrs. Rich.

## NEW OFFICERS ELECTED IN PORTLAND

The Portland, Ore., Women's Auxiliary elected the following officers at a recent meeting: Mrs. T. J. Rowe, president; Mrs. G. O. Kendall, vice president; Mrs. Milton Rowe, secretary, and Mrs. E. P. Murphy, treasurer. Bridge was enjoyed after the meeting. Luncheon was served on a lovely table, decorated with Valentine favors and red carnations. Hostesses for this meeting were: Mrs. L. A. Beard, Mrs. T. Spreadborough, and Mrs. E. P. Murphy.

## NEW OFFICERS ELECTED BY PASADENA AUXILIARY

Mrs. T. G. Graham entertained the Pasadena, Calif., Women's Auxiliary on January 15. During the meeting, plans for the year were made. An election of officers took place, at which time Mrs. W. H. Swihart was elected president; Mrs. T. G. Graham, vice president, and Mrs. George Shirk, sergeant-at-arms. Covered dish luncheon was served to the eleven in attendance. Snow and oranges served as decorations.

**Top row, left to right: Mrs. J. Bugger, Mrs. H. Bond and Mrs. J. Newsome, all of Philadelphia. Bottom row: Mrs. James F. Arthur, Dickson; Mrs. M. J. McHale, Scranton; Mrs. J. H. Lally, Oliphant. Photos taken at the annual convention of the Pennsylvania State Association of Master Plumbers, held recently at Allentown**

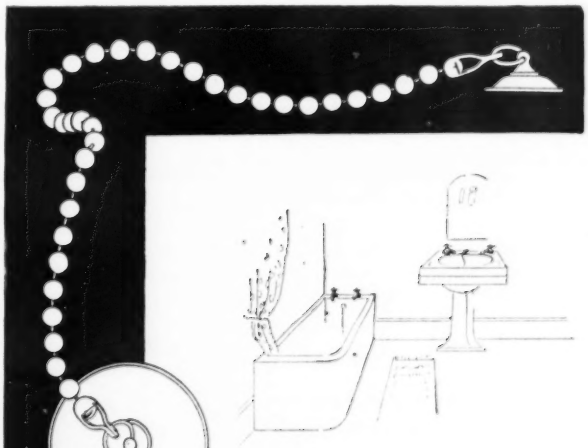

# PIPE FITTINGS

Clean threadways—Tapping to gauge—Absence of sand holes—all go to distinguish—IMICO—Fittings.

A full line in malleable iron, cast iron and brass.

Also manufacturers of brass and iron valves.

**ILLINOIS MALLEABLE IRON CO.**
**Chicago, Ill.**
MANUFACTURERS OF BRASS AND IRON VALVES



BATHROOM JEWELRY

Nothing so adds to the harmony of a modern bathroom as attention to detail . . . Bead Chain, *bathroom jewelry*, used on fixtures, is the finishing touch—the mark of superior taste . . . Urge your customers to use Bead Chain.

THE BEAD CHAIN MFG. COMPANY
1932 STATE STREET BRIDGEPORT, CONN.

*Bead Chain For Beauty*

## SAN FRANCISCO LADIES ENTERTAIN AT VALENTINE BRIDGE

The Canterbury hotel was the scene of a gay party, recently, when the ladies of the San Francisco Auxiliary gathered for their February luncheon meeting. Daffodils lent a festive touch to the table; in addition to this, each place was marked by a heart-shaped box of valentine candy. The new president, Mrs. Ed. Balling, presided, while Mrs. Bessie Koenig, vice president, acted as hostess. When luncheon was concluded, the ladies played bridge, high honors going to Mrs. Alex. Coleman with a score of 783, and Mrs. L. Ravani, whose card totaled 735. Mrs. Lena Sand earned the consolation prize with a score of 225.

## OKLAHOMA CITY ELECTS OFFICERS

At an election of officers of the Oklahoma City, Okla., Auxiliary on February 1, Mrs. J. J. Cosgrove was elected president; Mrs. R. L. Patton, vice president; Mrs. E. L. Radek, secretary, and Mrs. J. L. Swafford, treasurer.

## ENTERTAIN DENVER GROUP

Mr. and Mrs. Kandorf entertained the Denver, Colo., auxiliary and master plumbers' association at their home, recently, with a Valentine party. Dinner was followed by whist, with honors going to Mrs. Stocking, Mrs. Clayton, Mr. Kiser and Mr. Kriedel.

Those present were: Mr. and Mrs. E. B. Clayton, Mr. and Mrs. H. H. Mellema, Mr. and Mrs. C. R. Cooper, Mr. and Mrs. R. Denmer, Mr. and Mrs. L. H. Samson, Mr. and Mrs. F. Kriedel, Mr. and Mrs. G. Stocking, Mr. and Mrs. V. A. Kiser, Mr. and Mrs. J. P. Brickey, Mr. and Mrs. F. Bordeau, Mrs. C. Thurston, Mrs. Julia Hensler, Mr. A. J. Adshade, and Mr. John Hensler.

## ROCHESTER AUXILIARY HOLDS MEETINGS

The Ladies Auxiliary of the Rochester, N. Y., Associated Master Plumbers held a card party at the home of Mrs. Benjamin Kewin several weeks ago.

Another recent meeting was held at the home of Mrs. Bareham. Mrs. Joseph Paulus received with the hostess and following the card games, refreshments were served.

Officers of the Rochester auxiliary are: President, Mrs. Joseph A. Paulus; vice president, Mrs. Charles Gaenzler; secretary, Mrs. B. Kewin, and treasurer, Mrs. Geo. Long.

## TAMPA AUXILIARY RAISES MONEY FOR CONVENTION

The Tampa, Fla., Women's Auxiliary held a baked bean dinner recently at the master plumbers' club house. Forty-three persons were present. The profits from the affair are to be applied toward the state convention.

## AUXILIARY IN PORTLAND, OREGON, KEEPS BUSY

The Portland, Ore., Women's Auxiliary met at the home of Mrs. Edward Murphy early in January. The eleven in attendance made plans for a dinner for the master plumbers. Luncheon was served, and the hostesses were Mrs. Murphy, Mrs. G. O. Kendall and Mrs. Milton Rowe. Mrs. L. A. Beard entertained at her home on February 2.

## DEATH OF MRS. BEN BERNZEN

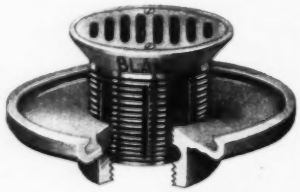
Mrs. Ben Bernzen, wife of Ben Bernzen, president of the Colorado Society of Sanitary and Heating Engineers and of the Northern Colorado Master Plumbers Association, died recently in a Boulder, Colo., hospital. Mrs. Bernzen was taken suddenly ill a week after the annual Colorado master plumbers' picnic held last August.


USE BLAKE SAFETY WASTE DRAINS

K-42J—Blake Heavy Duty Safety Waste Industrial Drain—

This shallow pattern drain is adapted for shallow floors. It has all the features and strength of other leading Blake industrial drains. Suitable for factories, warehouses, dairies, pits, garages etc.

K-25S—Blake Safety Waste Drain—



less trap. Nickel plated brass adjustable head, with screw-neck. I. P. Size—very shallow pattern. Flushing rings are extra. Similar heavy body as used in our K-25 Simplex Drain. Screwneck arrangement, and more shallow body being the only changes. Suitable for urinals, showers, and where an independent trap in floors of tile, marble or any composition is required. Sold by all jobbers.

"MAKE NO MISTAKE—USE THE TESTED BLAKE"

BLAKE SPECIALTY COMPANY
ROCK ISLAND « ILLINOIS

Boiler Tube Cleaners, Flue Brushes, Wire Heater Brushes, Handy Cleaner Brushes, Fire Brooms, Track Brooms.

*Tempered Steel*

MADE FOR LONG RUGGED SERVICE

*The Worcester line is complete.*
*Catalog gladly sent upon request.*

WORCESTER BRUSH and SCRAPER CO.
10 AUSTIN STREET :: WORCESTER, MASS

# Pipe —— Lines
## Connected by LYT

A two-year-old baby voted in the recent Irish elections, a news item says. That proves the Irish are right-up-to-the-minute on the latest election methods.

**RELIEF WANTED**

DOCTOR: "When you take your wife's temperature she must place the thermometer under her tongue and keep her mouth closed for two minutes."

MR. JONES: "Have you one that takes a little longer?"

*Little Mary, who had fallen ill, begged for a kitten.*

*It was found that an operation was necessary for the child's cure, and that she must go to the hospital. Her mother promised that if she were very brave she should have the very finest kitten to be found.*

*As Mary was recovering from the influence of the anesthetic, the nurse heard her muttering:*

*"It's a rotten way to get a kitten."*

TIT-BITS (LONDON)

HAUGHTY LADY (who had purchased a stamp): "Must I put it on myself?"

POST OFFICE CLERK (very politely): "It will probably accomplish more if you put it on the letter."

**FULL-TITLES**

A certain genial doctor is liable to strange fits of crabbedness.

One day a friend greeted him.

"Good morning, doctor."

"Good morning, certified public accountant," he snapped.

**MODERN BUSINESS METHODS**

Little Lawrence gave vent to a yelp of childish delight and grabbed the frightened mouse by its tail.

He was on the point of entering the house when the next-door neighbor spotted him.

"Where are you going with that mouse, Lawrie?" she called.

"I'm going to take it in to mother, if you want to know," he answered slyly. "And she'll give me a dime to take it out, if I know anything about it."

**JUST SUPPOSIN'!**

We shudder to think what would have happened had not the highly revelatory clothes era ended just in time to keep the girls from utilizing cellophane!

THE INSERT

*Helen: "Oh, Jack, a strange man kissed me while we were going through that long tunnel."*

*Jack: "What!! Point him out to me, and I'll teach him a few things."*

*Helen: "But, Jack, I don't believe you can."*

Mother: "Now, Willie, I want you to go in and get acquainted with the new nurse and kiss her nice."

Willie: "Yes, and get my face slapped like Papa did."

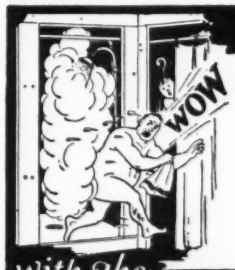
LEIGHTON'S GLOOM CHASER

*Inspector: "Got away, has he? Did you guard all the exits?"*

*County Constable: "Yes, but we think he must have left by one of the entrances."*

"Well," said the surgeon, as he sharpened his knife, "I've got to open my male."

LYT

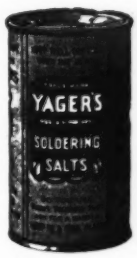




**Stop this!**

Eliminate those unexpected "shots" of hot and cold water in shower baths. Stop the time wasted in trying to get water at the right temperature. Install Powers Mixers. Write for 20-page book.

THE POWERS REGULATOR CO.
2716 Greenview Ave., Chicago
*Offices in 37 Cities*

*With The*
**POWERS SHOWER MIXER**




Yager's Soldering Salts enable you to do the kind of a lead job that you are really satisfied with. It flows quickly and easily to the point and is easy to use. Try a can—at our expense.

See McRae's 1932 Blue Book for list of distributors.

ALEX R. BENSON CO., Inc.
Hudson, N. Y.
*Sales Agency for Canada:* CANADIAN GENERAL ELECTRIC CO. Toronto and Montreal

**ROBERTSHAW THERMOSTATS**

*For authentic advice on your temperature control problems, write the Robertshaw Thermostat Company, Youngwood, Penna.*

**Do you know the Improved "Wilhelmi" All Copper Boiler?**

You have never heard, and for that matter, never will hear, of a "Wilhelmi" collapsing.

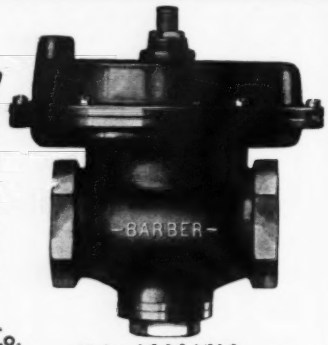
Every boiler is given additional internal strength through the use of specially constructed corrugated ribs.

This feature will help you sell the "Wilhelmi" "Wilhelmi" performance will keep it sold and will help sell others.

HAYES MANUFACTURING COMPANY
Makers
PATERSON NEW JERSEY

SAVE
*on gas bills!*

That's what everyone of your customers is trying to do—get gas bills down as low as possible. With a BARBER Gas Pressure Regulator on any gas appliance, gas bills will be much lower. Show one to your customers, take the orders and the profit. Write for details.




Made in ⅜", ½", ⅝", ¾", 1", 1¼", 1½" and 2" sizes

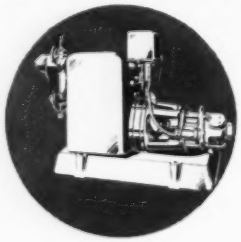
The Barber Gas Burner Co.
3702-4 Superior Avenue
CLEVELAND • • • OHIO

BARRETT
PLUMBER'S *Rough* BRASS *Goods*

*The Standard* — *of Comparison*

*Compression Stops*
*Compression Stops and Wastes*
*Ground Key Line*
*Waterworks Brass Goods*

THE CLEVELAND BRASS MANUFACTURING COMPANY
4606-4700 HAMILTON AVENUE CLEVELAND, OHIO



*Jennings Pumps*

JENNINGS CONDENSATION PUMP. Furnished in capacities of 4 to 200 g. p. m. For serving up to 150,000 sq. ft. of radiation. Write for Bulletin 99. The Nash Engineering Co., 41 Wilson Road, So. Norwalk, Conn.

INCREASE YOUR PROFITS

*There's a good margin for you*
*And satisfied customers too!*

Sell Dole Air & Vacuum Valves

*Write for full information.*

*How it looks inside Dole 2-B Vacuum Valves*

THE DOLE VALVE COMPANY 1913 Carroll Ave., Chicago

# Bath a Day Movement

HERE'S good news in a letter coming to the editor this week. "Enclosed is our order for 2,000 copies of 'The Story of the Bath' "—that's one form of good news which every business man in the plumbing and heating industry can understand easily. It came from an enterprising wholesaler who sees the advantage to every member of the plumbing field in their use of these stimulating booklets by which the public learns better to appreciate the importance and need of good plumbing.

"We will want more a little later"—that's not only a promise but good news to us in showing the planned and definite way in which this wholesaler is preparing for boosting plumbing in his locality.

For many years this booklet and in fact the entire "Bath-A-Day" campaign has been fighting vigorously for public attention and getting it. If you haven't seen a copy, write to the Editor of "Domestic Engineering" and one will come back by return mail.

# Little Sentences That Sell

**Write one of these BLACKBOARD EPIGRAMS on your window or bulletin board each day. Many master plumbers and heating contractors find them real business getters.**

Auctioneers are always of a more-bid disposition.

* * *

Whenever the counterfeiter needs money bad he makes it.

* * *

When the cat's away it's up to the mousetrap to get busy.

* * *

Nearly every man you meet is posing as his own ideal.

* * *

There is no peace for the would-be peacemaker who butts in.

* * *

Friends and umbrellas are seldom at hand when needed.

* * *

When actors quarrel they can resort to the make-up box.

* * *

Why isn't memory the thing we forget with?

* * *

Trouble seldom visits a man who isn't looking for it.

* * *

Some poems show more feeling than they do touch.

* * *

Actions don't speak louder than some golf stockings look.

* * *

Why does a head of hair more than equal the sum of its parts?

---

**New Bedford, Mass.**—Architect William Tallman, 222 Union street, is preparing plans for the proposed new X-ray and laboratory unit for St. Luke's hospital.

**Quincy, Mass.**—The New England Terminal Co. has retained George H. Dyson, 80 Boyleston street, Boston, to prepare plans and award contracts for the proposed oil terminal to include tanks and 10 buildings, which will be erected at a cost of $2,000,000.

**Gloucester, Mass.**—The Addison Gilbert hospital will ask bids soon for the construction of a hospital annex to cost $150,000. Phillips & Halloren, 191 Main street, prepared the plans.

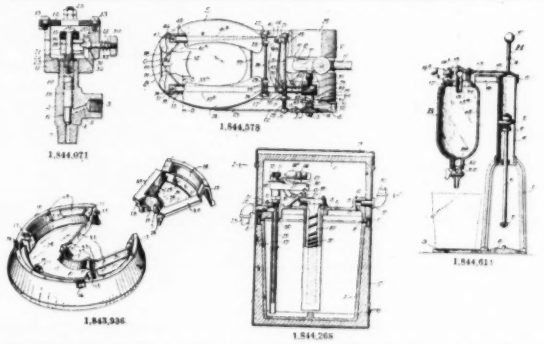
# PATENTS

## Plumbing Department

1,844,071. Valve Control. Robert E. Newell, Irwin, Pa., assignor to Robertshaw Thermostat Company, Youngwood, Pa., a corporation of Pennsylvania.

1,844,578. Sanitary Toilet. William Holoff, Los Angeles, Calif.

1,843,936. Water Heater. Edmund J. Te Pas, Lakewood, Ohio, assignor to The Cleveland Heater Company, Cleveland, Ohio, a Corporation of Ohio.



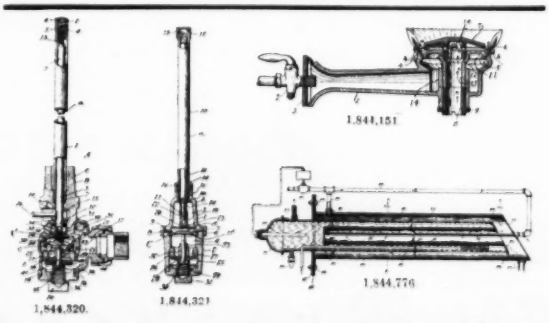
1,844,268. Water Heater. Max Alex, Davenport, Iowa.

1,844,614. Portable Device for Removing Impurities from Storage Tanks. John J. Tokheim, Cedar Rapids, Iowa.

1,844,320. Thermostatic Control for Water Heaters. Oscar J. Kay, Los Angeles, Calif., assignor to Federal Water Heater Corporation, Los Angeles, Calif., a Corporation of California.

1,844,321. Thermostatic Temperature Control. Oscar J. Kay, Los Angeles, Calif., assignor to General Water Heater Corporation, Los Angeles, Calif., a corporation of Delaware.

1,844,151. Gas Burner. Arthur Friedman, Cleveland, Ohio, assignor to The Cleveland Heater Company, Cleveland, Ohio, a corporation of Ohio.



1,844,776. Water Heater. James Arthur McElroy, Elizabeth, N. J.

1,845,121. Waste Trap. Ernest A. Bolt, El Paso, Tex., assignor of one-third to Robert Lander and one-third to Caven L. Newton, El Paso, Tex.

1,845,581. Water Heater. Walter C. Coakley, Spo-

RAVENA
IRON PIPE FITTINGS
1903-1932
OVER A QUARTER CENTURY OF SERVICE
A-1 QUALITY
ACCURATE GAUGE
PROPER TAPER
CORRECT NUMBER OF THREADS
PROMPT SHIPMENT OF ORDERS
ECONOMICAL PRICES
All Backed By
Twenty Eight Years
of
Manufacturing Experience
RAVENA IRON COMPANY
RAVENA N. Y.

DeWITT OPERATED HOTELS
feature
Unusually Comfortable Rooms,
Rates Starting at $2.50
and the
Finest Food in their Respective Cities
In CLEVELAND its
THE HOLLENDEN
ELMER HOGREN, Manager
1050 ROOMS - 1050 BATHS
4-Station Radio Speaker in Every Room
In COLUMBUS its
THE NEIL HOUSE
TOM A. SABREY, Manager
655 ROOMS - 655 BATHS
In AKRON its
THE MAYFLOWER
C. J. FITZPATRICK, Manager
450 ROOMS - 450 BATHS
4-Station Radio Speaker in Every Room
All DeWitt Operated Hotels are in the Heart of their Respective Cities

HAYS ERICO HEAVY CHROMIUM PLATED DOUBLE SINK FAUCET

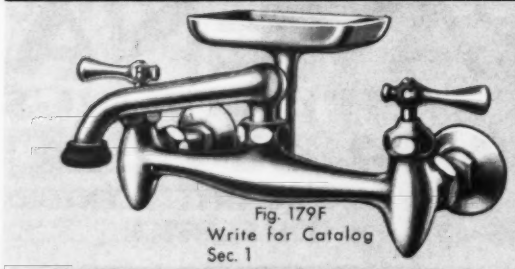


Fig. 179F
Write for Catalog
Sec. 1

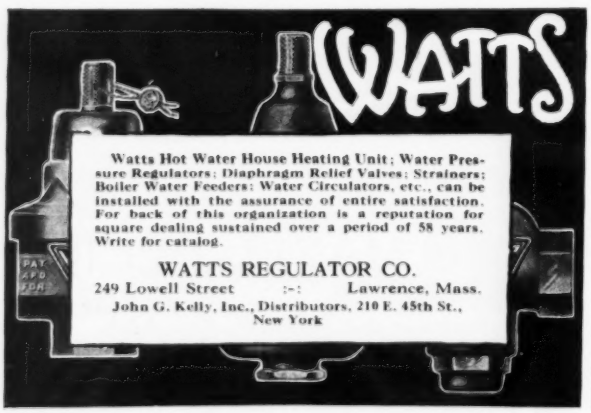
HAYS MFG. CO., ERIE, PA.

MYERS SELF-OILING POWER PUMPS

Your suburban and rural customers—those who live beyond the city water main—are now installing water systems or power pumps. This business is profitable business. It belongs to you. Secure your share of it through Myers Self-Oiling Power Pumps and Water Systems, the dependable line with a style and size for any service up to ten thousand gallons of water per hour. Action counts! Write or wire for our proposition.

THE F. E. MYERS & BRO. CO., Ashland, Ohio

ROYAL
RED-BLAST Boiler
*With Blower and Boiler Control Switch*
COMPLETE IN ONE UNIT
*Send for complete information*
HART & CROUSE CO., Utica, N. Y.



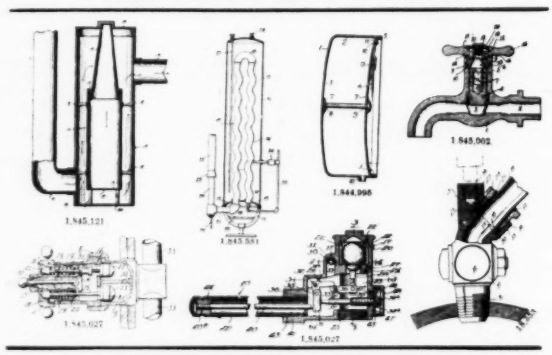

Watts Hot Water House Heating Unit; Water Pressure Regulators; Diaphragm Relief Valves; Strainers; Boiler Water Feeders; Water Circulators, etc., can be installed with the assurance of entire satisfaction. For back of this organization is a reputation for square dealing sustained over a period of 58 years. Write for catalog.

WATTS REGULATOR CO.
249 Lowell Street :-: Lawrence, Mass.
John G. Kelly, Inc., Distributors, 210 E. 45th St., New York

kane, Wash., assignor, by mesne assignments, to Doherty Research Company, New York, N. Y., a corporation of Delaware.

1,844,995. Flush Tank for Water Closet Systems. Joseph A. Vogel, Wilmington, Del., assignor to Joseph A. Vogel Company, Wilmington, Del., a corporation of Delaware.

1,845,002. Sealing Means for Stop Valves, Cocks Faucets, and the Like. Edward Otton, London, England, assignor to International Patents, Ltd., London, England, a Limited Company of Great Britain.



1,845,627. Combination Water Faucet. Alfred Rosewood, San Francisco, Calif.

1,845,027. Thermostat Mechanism. Simon J. Lonergan, La Porte, Ind., assignor to Bastian-Morley Company, La Porte, Ind., a corporation of Indiana.

18,353. Corporation Stop with Offset Connection. James Wilbur Simpson and Frank H. Mueller, Decatur, Ill., assignors to Mueller Co., Decatur, Ill.

1,844,670. Enameling Composition. Mahlon E. Manson, Milwaukee, Wis., assignor to Rundle Manufacturing Co., Milwaukee, Wis., a corporation of Wisconsin. An enameling composition for resisting ordinary acids consisting of approximately sixty-eight (68) parts of sodium silicate containing substantially twenty-three per cent (23%) soda and seventy-four per cent (74%) silica, five (5) parts of aluminum hydrate, thirteen (13) parts of borax, twelve (12) parts of sodium antimonate, six (6) parts of cryolite, and eight (8) parts of barium carbonate.

**New Haven, Conn.**—Norton & Townsend, 405 Temple street, are preparing plans for an addition to the Dr. J. H. Evan's hospital on Chapel street, to cost $100,000.

*Sensible Rates*

*Garage Attached*

The Breakers
— ON THE OCEAN FRONT —
Atlantic City — N. J.
Modern in construction, luxurious in appointments and convenient to all piers and amusements.

8 cents for each word including heading and address. Count seven words for keyed address. Minimum $2.00 for each insertion.

# CLASSIFIED ADVERTISING

One inch $4.00. Cash must accompany order. Copy should reach us eight days in advance of publication date.

## Situations Open

TERRITORY SALESMEN—MEN WITH experience in the Plumbing Field will find an enlarged opportunity selling Enamelware, Pottery, Brass Goods, Water Heaters, Pumps and Softeners, Radiation and Boilers, etc., direct from manufacturers to dealers. Weekly commission settlement. Address Quality Products Incorporated, Dayton, Ohio.

REPRESENTATIVES WANTED IN leading cities to handle highest grade line of radiator shields and radiator cabinets. Our representatives earn $500.00 to $1,000.00 per month the year around, above expenses. Full selling plan furnished. Address Key 256, "Domestic Engineering," 1900 Prairie Ave., Chicago.

## Situations Wanted

**In past have been assistant to manager in eastern warehouse; subbranch manager and salesman for radiator manufacturer, four years; salesman middle west and eastern territory radiator manufacturer, three years; experienced in plumbing and heating sales and have handled branch managership; can estimate plumbing and heating work; know the central Pennsylvania and central western jobbers and the trade; university education; 34 years of age. Address Key 724, "Domestic Engineering," 1900 Prairie Avenue, Chicago.**

RELIABLE BOOKKEEPER DESIRES position in plumbing or heating office. Good experience and good references. Address Key 725, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

HEATING ENGINEER THOROUGHLY conversant with all systems of Steam and Hot Water Heating, desires position of salesman, estimator or office manager with progressive heating company. Address Key 720, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

## For Sale

### PIPE MACHINES

*Used One Month*

**8" Williams Pipe Threading Machine**
**2" Williams RAPIDUCTION Pipe Threading machine, complete with pipe and bolt dies.**

**THE O'BRIEN MACHINERY COMPANY**
**113 North Third Street**
**Philadelphia, Pa.**

## Representatives Wanted

### SALES REPRESENTATIVES BRANCH MANAGERS SALESMEN

**who are thoroughly experienced in the sale of steam and hot water heating equipment, who have outstanding sales records and who are interested at this time in a lucrative sales opportunity such as does not usually exist, should write for further information. Give full particulars concerning experience, past connections and sales. Present members of organization are aware of this ad and all inquiries will be treated confidentially. Address P. O. Box 1222, Pittsburgh, Pa.**

SALES REPRESENTATIVE WANTED. Liberal commission basis on a high grade plumbing fixture, nationally known. Territory open in northern part of New York State; also Washington and Baltimore. Want men experienced in sales promotion among Architects, Jobbers and Plumbers. No objection to carrying one other line. Address Key 722, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

*Use this page to get what you want*

If you are looking for competent employes; or if you contemplate a change in position, have a patent for sale; wish to purchase or sell a plumbing and heating business; second-hand machinery or tools; form a co-partnership, etc., your advertisement on this page will put you in touch with the people you desire to reach.

The cost of insertion is only eight cents a word and may mean many dollars to you.

## Lines to Handle

DISTRIBUTORS AND MANUFACTURers' agents—A nationally known midwestern manufacturer of a complete line of gas-fired furnaces and boilers—also air-conditioning systems—is seeking additional distributors and manufacturers' agents in localities not yet assigned. This company's products are widely known and are recognized as leaders in their respective fields. Rapidly increasing popularity of gas-heating and air-conditioning in all parts of the country, presents an exceptional opportunity for profitable business to alert concerns. Write for details, giving complete information regarding present sales organization and lines handled. Address Key 726, "Domestic Engineering," 1900 Prairie Avenue, Chicago, Illinois.

MANUFACTURER OF NATIONALLY advertised line of drainage specialties has a number of desirable territories open for high grade, experienced, drainage salesmen. Attractive commissions and complete territory protection. Norman Boosey Mfg. Company, 5140 Hamilton Avenue, Detroit, Michigan.

MANUFACTURERS' AGENTS WANTED in Cleveland, Chicago, St. Louis, Dallas, New Orleans, Atlanta, Jacksonville and Richmond to handle complete line of Pipe Nipples, on a commission basis. Give full details in first letter. Address Key 718, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

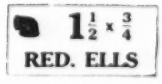
## Lines Wanted

EXPERIENCED PLUMBING SUPPLY salesman desires to represent in southern California manufacturers of pipe and other plumbing supplies or kindred lines. Large acquaintance with wholesale and retail trade, architects, etc. Address P. S., 605 Maxfield Building, Los Angeles, California.

EXPERIENCED SALESMAN WILL represent manufacturers selling direct to retail plumbers, Minnesota. Will pay cash or work on commission; furnish bond. Address Key 727, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

## Miscellaneous

### PLUMBERS' BIN LABELS

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# Index to Advertisers

## *March 19, 1932*


Acheson Mfg. Co.....107
Air Reduction Sales Co.....Inside Front Cover
Armstrong Bros. Tool Co.. 94
Axelson Mfg. Co.....108

Barber Gas Burner Co., The .....114
Barnes & Jones, Inc..... 77
Bead Chain Mfg. Co.....111
Benson Co., Inc., Alex R...113
Blake Specialty Co.....112
Burnham Boiler Corp.....Back Cover

Capitol Brass Division of Bohn Aluminum & Brass Corp. ..... 82
C. D. S. Products Corp.... 98
Church Mfg. Co., C. F..... 14
Cleveland Brass Mfg. Co..114
Conco Valve Division of Bohn Aluminum & Brass Corp. ..... 82
Crane Co..Inside Back Cover

Dahlquist Mfg. Co.....108
Dart Mfg. Co., E. M.....106
Decatur Pump Co..... 84
Dole Valve Co.....114
Duriron Co., Inc., The..... 89

Gerstein & Cooper Co..... 95
Goulds Pumps, Inc..16 and 17
Grabler Mfg. Co..... 76

Hart & Crouse Co.....116
Hayes Mfg. Co.....113
Hays Mfg. Co.....116
Hotel Breakers .....116
Hotel Hollenden .....115
Hotstream Heater Co..... 11

Illinois Malleable Iron Co.111

Jarecki Mfg. Co..... 98
Jenkins Bros. ..... 99
Jones Hollow Ware Co....107

Kennedy Valve Mfg. Co... 78
Kieley & Mueller Co.....105
Kohler Company .....101
Koven & Bro., Inc., L. O...103

Leonard-Rooke Co. .....109
Linde Air Products Co..... 7

Malleable Iron Fittings Co. 83
Mayflower Hotel .....115
Milwaukee Flush Valve Co.106
Morency-Van Buren Div. Scovill Mfg. Co..... 8
Motor Wheel Corp..... 5
Murdock Mfg. & Supply Co., The .....109
Myers & Bro. Co., F. E....116

Nash Engineering Co.....114
National Lead Co..... 19
National Regulator Co.... 85
Neil House Hotel.....115
Norristown Magnesia & Asbestos Co. ..... 13

Penberthy Injector Co.... 49
Penna. Range Boiler Co... 90
Phoenix Brass Fittings Corp. ..... 94
Powers Regulator Co.....113

Ravena Iron Co.....115
Red Jacket Mfg. Co.....102
Republic Steel Corp..... 9
Ridge Tool Co.....106
Robertshaw Thermostat Co.113
Rome Radiation Co..... 50
Russell & Co., W. A..... 90

San-Equip Co., The..... 81
Scovill Mfg. Co., Morency-Van Buren Div. ..... 8
Scovill Mfg. Co..... 15
Semler Co. .....106
Sloan Valve Co.....120
Smooth-On Mfg. Co..... 93
Spencer Heater Co..... 61
Standard Sanitary Mfg. Co. 75
Stokes Rubber Co., Jos.... 10

Taber Pump Co.....107
Teeple Co., L. R..... 83
Toledo Pipe Threading Machine Co. ..... 20
Trenton Brass & Machine Co. ..... 85

United Hotels Co. of America ..... 93
U. S. Hame Co.....107

Vogel Co., Jos. A..... 3

Warren Webster & Co.... 86
Watts Regulator Co.....116
Weis, Mfg. Co., Henry.... 79
Wise, Inc., J. B.....119
Worcester Brush & Scraper Co. .....112

Youngstown Sheet & Tube Co. ..... 6

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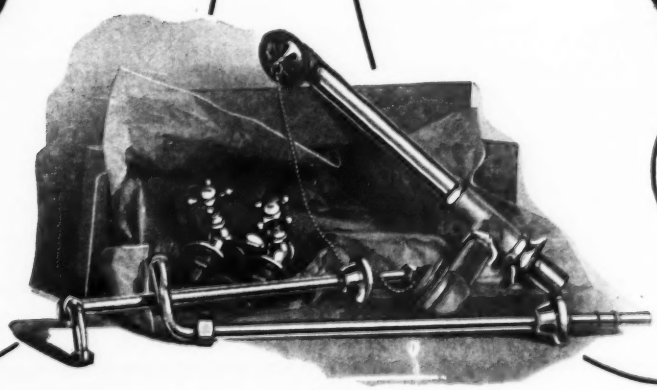

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